

SAFETY COMPLIANCE TESTING FOR FMVSS 201U
Occupant Protection In Interior Impact
Upper Interior Head Impact Protection

GENERAL MOTORS CORPORATION
2004 Chevrolet Colorado LS
NHTSA No. C40112

MGA RESEARCH CORPORATION
446 Executive Drive
Troy, Michigan 48083



Test Dates: April 13-14, 2004
Report Date: April 16, 2004

FINAL REPORT

PREPARED FOR:

U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
400 SEVENTH STREET, SW
ROOM 6111 (NVS-220)
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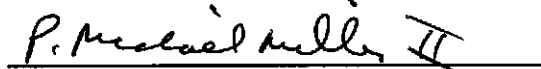
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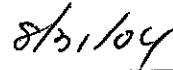

David G. Gotwals, Project Engineer


Helen A. Kaleto, Project Manager

Approved By:



Approval Date:

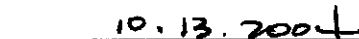

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16. Abstract A compliance test was conducted on the subject 2004 Chevrolet Colorado LS, NHTSA No. C40112, in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-201U-01 for the determination of FMVSS 201U compliance. The test was conducted at the MGA Research Corporation in Troy, Michigan on April 13-14, 2004. Test failures identified were as follows: NONE The data recorded seems to indicate that the 2004 Chevrolet Colorado LS tested appears to comply with the requirements for FMVSS 201U which were set forth by the National Highway Traffic Safety Administration.			
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1.0 PURPOSE OF COMPLIANCE TEST

The purpose of this head impact compliance test was to determine whether the subject vehicle, a 2004 Chevrolet Colorado LS, meets the performance requirements of FMVSS 201U, Occupant Protection in Interior Impact - Upper Interior Head Impact Protection.

Tests were conducted during April 13-14, 2004 on a 2004 Chevrolet Colorado LS, manufactured by General Motors Corporation.

All tests were conducted in accordance with the U. S. Department of Transportation, National Highway Traffic Safety Administration's Laboratory Test Procedure TP-201U-01 dated April 3, 1998 and the corresponding MGA Research Corporation's FMVSS 201U procedure number MGATP201U_FRAME#2 dated March 20, 2003.

All tests were conducted at MGA Research Corporation in Troy, Michigan and were performed by MGA engineers and technicians. The FMVSS 201U impactor test machine was used to conduct the testing. Target locations were determined by using a Coordinate Measurement Machine in conjunction with the MGA EZ-Target™ program and MGA procedure MGATP201U_Test Series dated March 20, 2003.

2.0 COMPLIANCE TEST DATA SUMMARY

The 2004 Chevrolet Colorado LS was equipped with A, B, and Rear-pillars, grab handles above each door, an adjustable seat belt anchor on each B-pillar, a fixed seat belt anchor on each rear-pillar, and a light console on the center upper roof.

Upon completion of targeting the test vehicle, ten (10) targets were chosen to be impacted based upon engineering judgment and certification test data provided by General Motors Corporation. Targets were chosen which appeared most likely to give high HIC(d) values. The ten (10) targets chosen were:

AP1	BP1	RH	UR5
AP2	BP3	SR2B-Left	
AP3	RP1	SR2-B Right	

The 2004 Chevrolet Colorado LS tested appears to comply with the performance criteria for FMVSS 201U. The HIC(d) measured using the Part 572L (Free Motion Headform) was below 1000 for each tested component.

TABLE 2-1
SUMMARY TABLE OF TEST RESULTS

VEH. MOD YR/MAKE/MODEL/BODY: 2004 Chevrolet Colorado LS

VEH. NHTSA NO.: C40112 VIN: 1GCCS136848149843 COLOR: Maroon

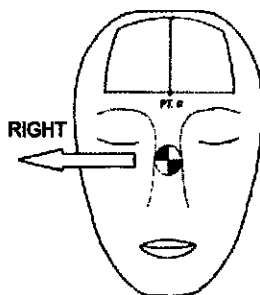
VEH. BUILD DATE: February, 2004 TEST DATES: April 13-14, 2004

TEST LABORATORY: MGA Research Corporation

OBSERVERS: David Gotwals, Nicholas Brzuch, George Baker

TARGET	VEHICLE SIDE	HORIZONTAL ANGLE (deg)	VERTICAL ANGLE (deg)	VELOCITY (kph)	HIC(d)	FMH HIC	IMPACT ON FMH (mm)	
							Above	Left/Right
AP1	Right	159	49	23.8	624	607	6	7 Left
AP2	Left	202	42	23.6	461	390	13	4 Left
AP3	Right	159	39	23.5	667	664	12	3 Left
BP1	Left	270	28	23.8	620	601	12	6 Left
BP3	Right	88	-3	23.8	635	621	12	18 Right
RP1	Right	60	31	23.8	636	623	10	5 Left
RH	Left	0	22	24.0	678	678	20	12 Left
SR2-B	Left	270	50	23.4	946	1033	4	6 Left
SR2-B	Right	90	50	23.4	978	1076	8	4 Left
UR5	Right	90	38	23.6	698	705	56	4 Left

Above and left/right refers to the position relative to reference pt. 0 where the target made contact with the Free Motion Headform. See the diagram below for details.



POST TEST COMMENTS:

The following description lists any post-test damage or other test observations for each target.

AP2 Left: The A-Pillar trim separated during impact.

AP3 Right: The A-Pillar trim was separated from the pillar.

RP1 Right: No visible damage to the FMH; slight headliner deformation.

SR2(B) Left: Slight headliner deformation.

SR2(B) Right: Slight headliner deformation.

No damage was observed for any other targets.

REMARKS:

The targets listed were impacted in the following order:

Right: RP1, AP3, AP1, SR2(B), BP3, UR5

Left: AP2, SR2(B), BP1, RH

The 150 mm rule was observed for targets horizontal to each other and the 200 mm rule was observed for vertical components.

RECORDED BY: David G. Gotwals

DATE: April 14, 2004

APPROVED BY: Helen A. Kalet

TABLE 2-2
GENERAL TEST AND VEHICLE PARAMETER DATA

VEH. MOD YR/MAKE/MODEL/BODY: 2004 Chevrolet Colorado LS

VEH. NHTSA NO.: C40112 VIN: 1GCCS136848149843 COLOR: Maroon

VEH. BUILD DATE: February, 2004 TEST DATES: April 13-14, 2004

TEST LABORATORY: MGA Research Corporation

OBSERVERS: David Gotwals, Nicholas Brzuch, George Baker

INTERIOR TRIM INFORMATION: A, B, and Rear-pillars, grab handles above each door, an adjustable seat belt anchor on each B-pillar, a fixed seat belt anchor on each rear-pillar, and a light console on the center upper roof.

SUNROOF INFORMATION:

Installed: Yes X No
Operation: Electric X Manual

ROLL-BAR INFORMATION:

Installed: Yes X No
Padded: Yes X No
Braces: Yes X No

GENERAL INFORMATION:

Date Received: April 9, 2004; Odometer Reading 12 miles

DATA FROM VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured By: General Motors Corporation

Date of Manufacture: February, 2004; VIN: 1GCCS136848149843

GVWR: 2268 kg; GAWR FRONT: 1149 kg;

GAWR REAR: 1314 kg

DATA FROM TIRE PLACARD:

Tire Pressure with Maximum Capacity Vehicle Load:

FRONT: 230 kpa REAR: 230 kpaRecommended Tire Size: P225/75R15

Recommended Cold Tire Pressure:

FRONT: 230 kpa REAR: 230 kpaSize of Tire on Test Vehicle: P225/75R15Type of Spare Tire: T155/90R16 Saver: X; Standard

VEHICLE CAPACITY DATA:

Type of Front Seats: Bench ; Bucket X ; Split Bench Number of Occupants: Front 2 ; Rear 3 ; TOTAL 5 VEHICLE CAPACITY WEIGHT (VCW) = 550 kgNo. of Occupants x 68 kg = 340 kgRated Cargo/Luggage Weight (RCLW) = 210 kg (difference)Maximum Cargo/Luggage Weight (RCLW) = 136 kg

WEIGHT OF TEST VEHICLE AS DELIVERED AT LABORATORY: (with maximum fluids)

Right Front = 460.0 kg Right Rear = 368.0 kgLeft Front = 482.5 kg Left Rear = 388.5 kgTOTAL FRONT = 942.5 kg TOTAL REAR = 756.5 kg% Total Weight = 55.5 % % Total Weight = 44.5 %TOTAL DELIVERED WEIGHT = 1699.0 kg

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Delivered Weight = 1699.0 kgRated Cargo/Luggage Weight = 136.0 kgTarget Test Weight = 1835.0 kg

WEIGHT OF TEST VEHICLE:

Right Front = 454.5 kg Right Rear = 436.5 kg
 Left Front = 479.0 kg Left Rear = 461.0 kg
 TOTAL FRONT = 933.5 kg TOTAL REAR = 897.5 kg
 % Total Weight = 51.0 % % Total Weight = 49.0 %
 TOTAL TEST WEIGHT = 1831.0 kg
 Weight of ballast secured in vehicle's cargo area = 136.0 kg

TEST VEHICLE ATTITUDE:

AS DELIVERED: Right Front 854.0 mm; Left Front 837.0 mm;
 Right Rear 871.0 mm; Left Rear 850.0 mm;
 Pitch Angle at Right Door Sill = 0.9 Rear higher
 Pitch Angle at Left Door Sill = 0.7 Rear higher
 Roll Angle at Front Bumper = 0.5 Right higher
 Roll Angle at Rear Bumper = 0.5 Right higher

FULLY LOADED: Right Front 856.0 mm; Left Front 836.0 mm;
 Right Rear 850.0 mm; Left Rear 830.0 mm;
 Pitch Angle at Right Door Sill = 0.5 Rear higher
 Pitch Angle at Left Door Sill = 0.3 Rear higher
 Roll Angle at Front Bumper = 0.7 Right higher
 Roll Angle at Rear Bumper = 0.5 Right higher

AS TARGETED: Right Front 1044.0 mm; Left Front 1034.0 mm;
 Right Rear 1056.0 mm; Left Rear 1039.0 mm;
 Pitch Angle at Right Door Sill = 0.9 Rear higher
 Pitch Angle at Left Door Sill = 0.6 Rear higher
 Roll Angle at Front Bumper = 0.5 Right higher
 Roll Angle at Rear Bumper = 0.5 Right higher

AS TESTED ON RIGHT SIDE:

Pitch Angle at Right Door Sill = 0.9 Rear higher
 Pitch Angle at Left Door Sill = 0.6 Rear higher
 Roll Angle at Front Bumper = 0.5 Right higher
 Roll Angle at Rear Bumper = 0.5 Right higher

VEHICLE WHEELBASE = 3195.0 mm

REMARKS: The seat travel distance was measured to be 240 mm for the driver front seat and 240 mm for the passenger front seat.

RECORDED BY: David G. Gotwals

DATE: April 9, 2004

APPROVED BY: Helen A. Kalet

TABLE 2-3

HORIZONTAL IMPACT ANGLE RANGE FOR A AND B PILLARS

VEH. MOD YR/MAKE/MODEL/BODY: 2004 Chevrolet Colorado LSVEH. NHTSA NO.: C40112 VIN: 1GCCS136848149843 COLOR: MaroonVEH. BUILD DATE: February, 2004 TEST DATES: April 13-14, 2004TEST LABORATORY: MGA Research CorporationOBSERVERS: David Gotwals, Nicholas Brzuch, George Baker

HORIZONTAL IMPACT ANGLE RANGE FOR A AND B PILLARS

	HORIZONTAL ANGLE SPECIFIED RANGE	MINIMUM HORIZONTAL ANGLE	MAXIMUM HORIZONTAL ANGLE
A-PILLAR	L 195°-255°	L 201.1°	L 247.3°
	R 105°-165°	R 112.4°	R 159.2°
B-PILLAR	L 195°-345°	L 201.6°	L 287.9°
	R 15°-165°	R 72.5°	R 159.4°

AS DETERMINED USING THE PROCEDURES SPECIFIED IN S8.13.4.1

REMARKS:

RECORDED BY: David G. GotwalsDATE: April 9, 2004APPROVED BY: Helen A. Kalet

TABLE 2-4

VERTICAL IMPACT ANGLE RANGES

VEH. MOD YR/MAKE/MODEL/BODY: 2004 Chevrolet Colorado LSVEH. NHTSA NO.: C40112 VIN: 1GCCS136848149843 COLOR: MaroonVEH. BUILD DATE: February, 2004 TEST DATES: April 13-14, 2004TEST LABORATORY: MGA Research CorporationOBSERVERS: David Gotwals, Nicholas Brzuch, George Baker

VERTICAL IMPACT ANGLE RANGES

		VERTICAL ANGLE SPECIFIED RANGE	MINIMUM VERTICAL ANGLE	MAXIMUM VERTICAL ANGLE
FRONT HEADER	FH1	L 0°-50°	L 0°	L 50°
		R 0°-50°	R 0°	R 50°
	FH2	L 0°-50°	L 0°	L 50°
		R 0°-50°	R 0°	R 50°
SIDE RAIL	SR1	L 0°-50°	L 0°	L 50°
		R 0°-50°	R 0°	R 50°
	SR2A	L 0°-50°	L 0°	L 50°
		R 0°-50°	R 0°	R 50°
	SR2B	L 0°-50°	L 0°	L 50°
		R 0°-50°	R 0°	R 50°
	SR3-1	L 0°-50°	L 0°	L 50°
		R 0°-50°	R 0°	R 50°
	SR3-2	L 0°-50°	L 0°	L 50°
		R 0°-50°	R 0°	R 50°
REAR HEADER	RH	L 0°-50°	L 0°	L 22°
		R 0°-50°	R 0°	R 22°
A-PILLAR	AP1	L -5°-50°	L -5°	L 48°
		R -5°-50°	R -5°	R 49°
	AP2	L -5°-50°	L -5°	L 42°
		R -5°-50°	R -5°	R 42°

		VERTICAL ANGLE SPECIFIED RANGE	MINIMUM VERTICAL ANGLE	MAXIMUM VERTICAL ANGLE
	AP3	L -5°-50°	L -5°	L 39°
		R -5°-50°	R -5°	R 39°
B-PILLAR	BP1	L -10°-50°	L -10°	L 28°
		R -10°-50°	R -10°	R 28°
	BP2*	L 0°-50°	L 0°	L 7°
		R 0°-50°	R 0°	R 7°
	BP3	L -10°-50°	L -10°	L -3°
		R -10°-50°	R -10°	R -3°
	BP4	L -10°-50°	L -10°	L -10°
		R -10°-50°	R -10°	R -10°
Rear Pillar	RP1	L -10°-50°	L -10°	L 31°
		R -10°-50°	R -10°	R 31°
	RP2*	L -10°-50°	L -10°	L 2°
		R -10°-50°	R -10°	R 2°
UPPER ROOF 1		0°-50	0°	42°
UPPER ROOF 2		0°-50	0°	38°
UPPER ROOF 3		0°-50	0°	45°
UPPER ROOF 4		0°-50	0°	45°
UPPER ROOF 5		0°-50	0°	38°
UPPER ROOF 6		0°-50	0°	45°

As determined using the Procedures specified in S8.13.4.2. *Targets BP2 and RP2 are seat belt anchorage locations.

RECORDED BY: David G. Gotwals

DATE: April 8, 2004

APPROVED BY: Helen A. Kalet

TABLE 2-5

TARGET MEASUREMENTS

VEH. MOD YR/MAKE/MODEL/BODY: 2004 Chevrolet Colorado LSVEH. NHTSA NO.: C40112 VIN: 1GCCS136848149843 COLOR: MaroonVEH. BUILD DATE: February, 2004 TEST DATES: April 13-14, 2004TEST LABORATORY: MGA Research CorporationOBSERVERS: David Gotwals, Nicholas Brzuch, George Baker

Measurement	Description	Left Side	Right Side
M	Seat Fore/Aft Travel (Front seats)	240.0 mm	240.0 mm
T°	Horizontal < {CG-F1 (Left Seat) to (Right A-Pillar)}	112.7°	--
A1°	360° - T°	247.3°	--
W°	Horizontal < {CG-2 (Left Seat) to (Left A-Pillar)}	201.1°	--
A2°	A2° = W°	201.1°	--
U°	Horizontal < {CG-2 (Left Seat) to (Left B-Pillar)}	287.9°	--
B1°	B1° = U°	287.9°	--
V°	Horizontal < {CG-R (Left Seat) to (Left B-Pillar)}	201.6°	--
B2°	B2° = V°	201.6°	--
W° (right)	Horizontal < {CG-F2 (Right Seat) to (Right A-Pillar)}	--	159.2°
A1° (right)	A1° (right) = W° (right)	--	159.2°
T° (right)	Horizontal < {CG-F1 (Right Seat) to (Left A-Pillar)}	--	247.6°
A2° (right)	360°-T° (right)	--	112.4°
V° (right)	Horizontal < {CG-R (Right Seat) to (Right B-Pillar)}	--	159.4°
B1° (right)	B1° (right) = V° (right)	--	159.4°
U° (right)	Horizontal < {CG-F2 (Right Seat) to (Right B-Pillar)}	--	72.5°
B2° (right)	B2° (right) = U° (right)	--	72.5°
J	A-Pillar {(Plane 3) - (Plane 5)}	308.1 mm	309.4 mm
J/2	J + 2	154.1 mm	154.7 mm
D1	Upper Roof {(Plane A) - (Plane B)}	1603.4 mm	
D1/2	D1 + 2	801.7 mm	
D2	Upper Roof {(Plane C) - (Plane D)}	1211.3 mm	
D2/2	D2 + 2	605.7 mm	
.35D1	.35 x D1	561.2 mm	
.35D2	.35 x D2	424.0 mm	

Measurement	Description	Left Side	Right Side
N	B-Pillar {(BPR) - (lowest point on daylight opening forward of B-Pillar)}	454.9 mm	455.2 mm
N/2	B-Pillar {(BP3) - (lowest point on daylight opening forward of B-Pillar)}	227.5 mm	227.6 mm
N/4	B-Pillar {(BP4) - (lowest point on daylight opening forward of B-Pillar)}	113.7 mm	113.8 mm
D	R-Pillar (Point 7 – Point M)	710.0 mm	710.0 mm
D/2	D / 2	355.0 mm	355.0 mm
3D/7	3D / 7	304.3 mm	304.3 mm

As determined using the Procedures specified in S10.1-10.13.

SgRP Locations (vehicle coordinates)						
	Left (mm)			Right (mm)		
	x	y	z	x	y	z
Front	1081.3	-360.0	280.0	1081.3	360.0	280.0
Rear Row	1907.0	-360.0	325.0	1907.0	360.0	325.0

SgRP Locations (world coordinates)						
	Left (mm)			Right (mm)		
	x	y	z	x	y	z
Front	1082.9	-359.7	280.1	1084.1	360.3	279.5
Rear Row	1910.0	-359.4	325.2	1911.2	360.6	324.6

CG Locations (world coordinates)						
	Left (mm)			Right (mm)		
	x	y	z	x	y	z
CGF1	1002.9	-359.7	940.1	1004.1	360.3	939.5
CGF2	1242.9	-359.7	940.1	1244.1	360.3	939.5
CGR	2070.0	-359.4	985.2	2071.2	360.6	984.6

REFERENCE FOR VEHICLE COORDINATE SYSTEM:

Driver door striker upper bolt hole (x, y, z) = (1310.1, 755.2, 394.9)

REMARKS:

RECORDED BY: David G. Gotwals

DATE: April 9, 2004

APPROVED BY: Helen A. Kaleto

TABLE 2-6

SUMMARY OF TARGETING RESULTS

VEH. MOD YR/MAKE/MODEL/BODY: 2004 Chevrolet Colorado LSVEH. NHTSA NO.: C40112 VIN: 1GCCS136848149843 COLOR: MaroonVEH. BUILD DATE: February, 2004 TEST DATES: April 13-14, 2004TEST LABORATORY: MGA Research CorporationOBSERVERS: David Gotwals, Nicholas Brzuch, George Baker

SUMMARY OF TARGETING RESULTS								
Target	Location (mm)			Horizontal Angle (deg)	Vertical Angle (deg)	Relocation (Yes/No)	Extension (# of 25 mm Spheres)	Impact (Yes/No)
	x	y	z					
A-Pillar Left Side								
AP1	807.1	-564.1	1046.6	202	48	No	--	No
AP2	646.7	-595.0	959.5	202	42	No	--	Yes
AP3	544.4	-615.5	893.3	202	39	No	--	No
A-Pillar Right Side								
AP1	808.4	555.2	1047.7	159	49	No	--	Yes
AP2	646.5	591.7	960.5	159	42	No	--	No
AP3	544.1	615.2	893.7	159	39	No	--	Yes
B-Pillar Left Side								
BP1	1403.2	-494.7	1128.4	270	28	No	--	Yes
BP2	1379.1	-615.6	866.1	270	7	No	--	No
BP3	1319.3	-635.5	900.3	272	-3	No	--	No
BP4	1467.2	-680.5	787.2	202	-10	No	--	No
B-Pillar Right Side								
BP1	1397.9	490.1	1128.2	90	28	No	--	No
BP2	1380.1	610.9	867.4	90	7	No	--	No
BP3	1324.7	630.9	901.2	88	-3	No	--	Yes
BP4	1466.0	675.8	787.9	139	-10	No	--	No
Rear Pillar Left Side								
RP1	2101.1	-503.2	1104.2	300	31	No	--	No
RP2	2181.7	-580.0	888.7	270	2	No	--	No
Rear Pillar Right Side								
RP1	2100.9	501.1	1101.9	60	31	No	--	Yes

SUMMARY OF TARGETING RESULTS								
Target	Location (mm)			Horizontal Angle (deg)	Vertical Angle (deg)	Relocation (Yes/No)	Extension (# of 25 mm Spheres)	Impact (Yes/No)
	x	y	z					
RP2	2173.2	578.0	886.1	90	2	No	--	No
Front Header Left Side								
FH1	732.9	-472.0	1093.8	--	--	Yes	--	--
REL	731.3	-443.3	1092.1	180	50	--	1	No
FH2	717.8	-324.5	1098.2	180	50	No	--	No
Front Header Right Side								
FH1	728.3	461.5	1093.6	--	--	Yes		--
REL	724.6	443.9	1087.6	180	50	--	1	No
FH2	716.1	311.6	1098.9	180	50	No	--	No
Side Rail Left Side								
SR1	957.6	-497.7	1094.9	270	50	No	--	No
SR2A	1106.7	-503.2	1116.3	--	--	Yes	--	--
REL	1139.4	-478.0	1110.7	270	50	--	2	No
SR2B	1102.6	-502.9	1116.3	--	--	Yes		--
REL	1100.3	-538.5	1097.6	270	50	--	2	Yes
SR31	1628.6	-476.8	1120.3	270	50	No	--	No
SR32	1800.9	-478.4	1118.6	270	50	No	--	No
Side Rail Right Side								
SR1	959.4	495.9	1094.5	90	50	No	--	No
SR2A	1107.6	498.8	1115.8	--	--	Yes	--	--
REL	1138.6	480.5	1107.4	90	50	--	2	No
SR2B	1098.7	499.5	1114.9	--	--	Yes	--	--
REL	1099.7	540.0	1093.0	90	50	--	2	Yes
SR31	1631.9	473.8	1119.4	90	50	No	--	No
SR32	1802.1	471.2	1118.7	90	50	No	--	No
Rear Header Left Side								
RH	2152.5	-373.0	1130.6	0	22	No	--	Yes
Rear Header Right Side								
RH	2150.0	374.0	1130.3	0	22	No	--	No
Upper Roof Left Side								
UR1	1238.0	-407.7	1173.4	270	42	No	--	No
UR2	1404.9	-409.0	1175.6	270	38	No	--	No

SUMMARY OF TARGETING RESULTS								
Target	Location (mm)			Horizontal Angle (deg)	Vertical Angle (deg)	Relocation (Yes/No)	Extension (# of 25 mm Spheres)	Impact (Yes/No)
	x	y	z					
UR3	1988.2	-414.1	1178.8	315	45	No	--	No
Upper Roof Right Side								
UR4	1240.9	405.6	1170.9	90	45	No	--	No
UR5	1396.9	406.4	1172.9	90	38	No	--	Yes
UR6	1985.6	414.2	1179.9	45	45	No	--	No

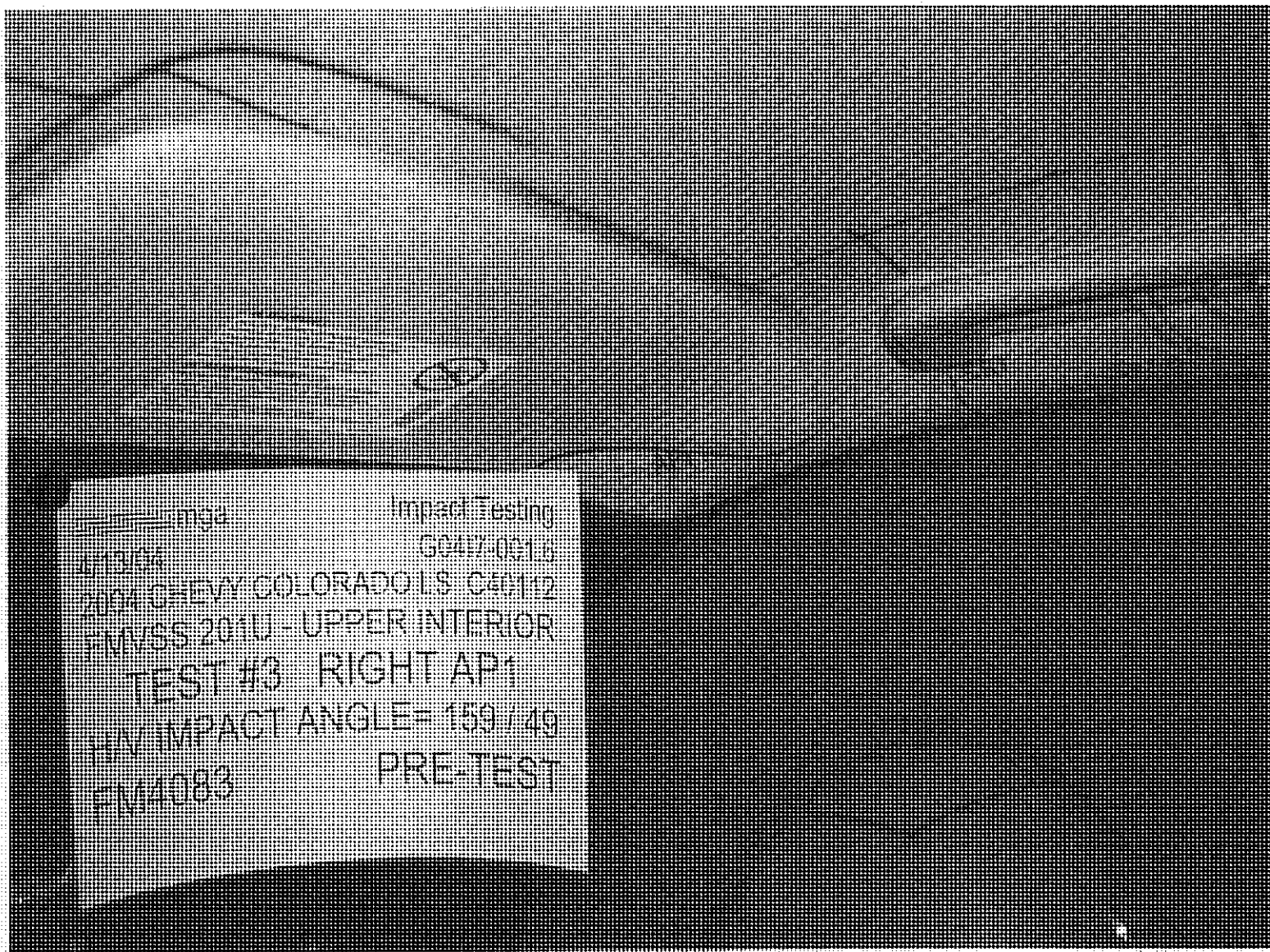
As determined using the Procedures specified in S10.1-10.13.

REMARKS:

RECORDED BY: David G. Gotwals

DATE: April 9, 2004

APPROVED BY: Helen A. Kalet





IMPACT TEST
G9417-021.6
2010 FORD FOCUS COLORED IS CALIF
FVSS 2010 - UPPER INTERIOR
TEST #3 RIGHT AP1
IMPACT ANGLE - 150 / 49
POST TEST

Impact Testing
4/13/04 G0417-001.6
2004 CHEVY COLORADO LS G40112
FMVSS 201U - UPPER INTERIOR
TEST #3 RIGHT AP1
HV IMPACT ANGLE= 159 / 49
FM4083 POST TEST

MICHIGAN OPERATIONS
DATE: 3/20/03
SUPERCEDES: MGATP201U_FRAME #2.4

DOC. NO.: MGATP201U_FRAME #2
REVISION NO.: 5
PAGE 9 OF 9

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: C40112 VEHICLE YR/MAKE/MODEL: 2001 Chevy Colorado LS

GENERAL TEST PARAMETERS:

Test Number: 3

Target (Vehicle Side): left right API

Temperature: 24 °F °C

MGA Test Reference No.: FM4083

Humidity: 23 %

Approach Angles: Horizontal 159 °

Time of Test: 2:28 am/pm pm

Vertical 49 °

FMH Serial No: 38

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
<u>624</u>	<u>607</u>	<u>7.7</u>	<u>23.8</u>	<u>6</u>	<u>7</u>

INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
<u>X</u>	<u>5</u>	<u>J36197</u>	<u>-107.5</u>	<u>1.20</u>	<u>1.20</u>
<u>Y</u>	<u>6</u>	<u>J36193</u>	<u>101.1</u>	<u>1.23</u>	<u>1.23</u>
<u>Z</u>	<u>7</u>	<u>J36353</u>	<u>97.1</u>	<u>1.51</u>	<u>1.51</u>

REMARKS (Summary of test, damage, non-compliance, invalid test, etc.): _____

NO VISIBLE DAMAGE

Recorded By: [Signature] Approved By*: Heleen A. Kalish Date: 4/13/04

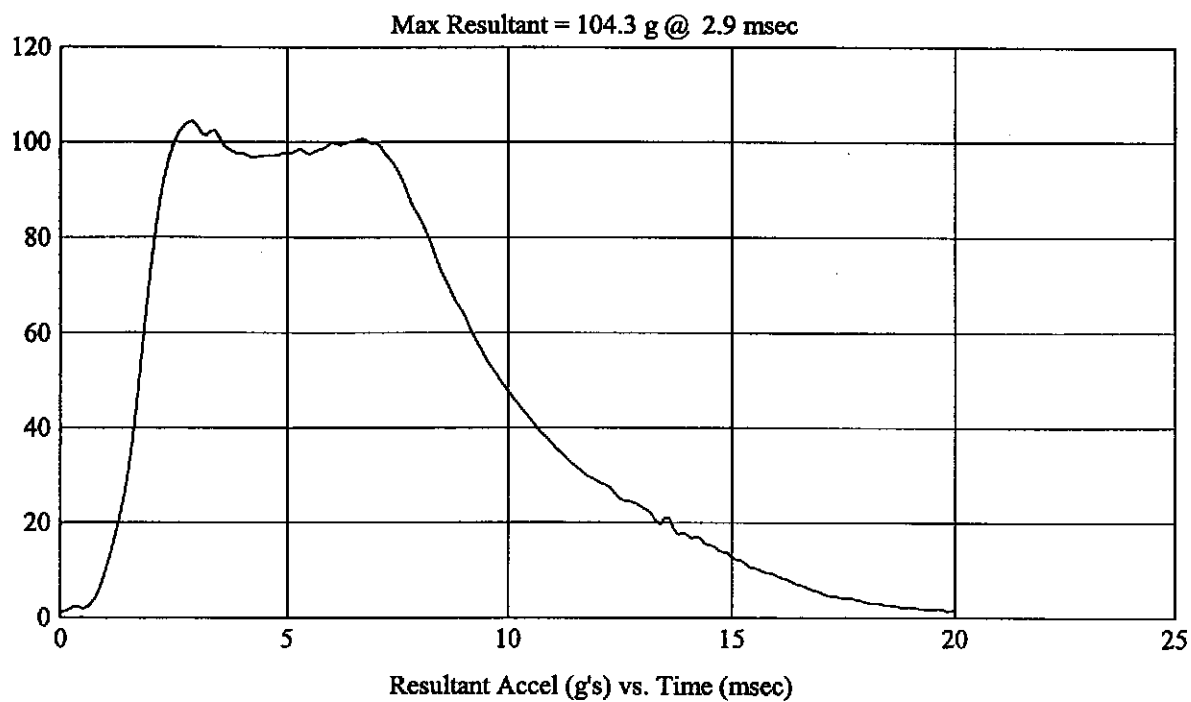
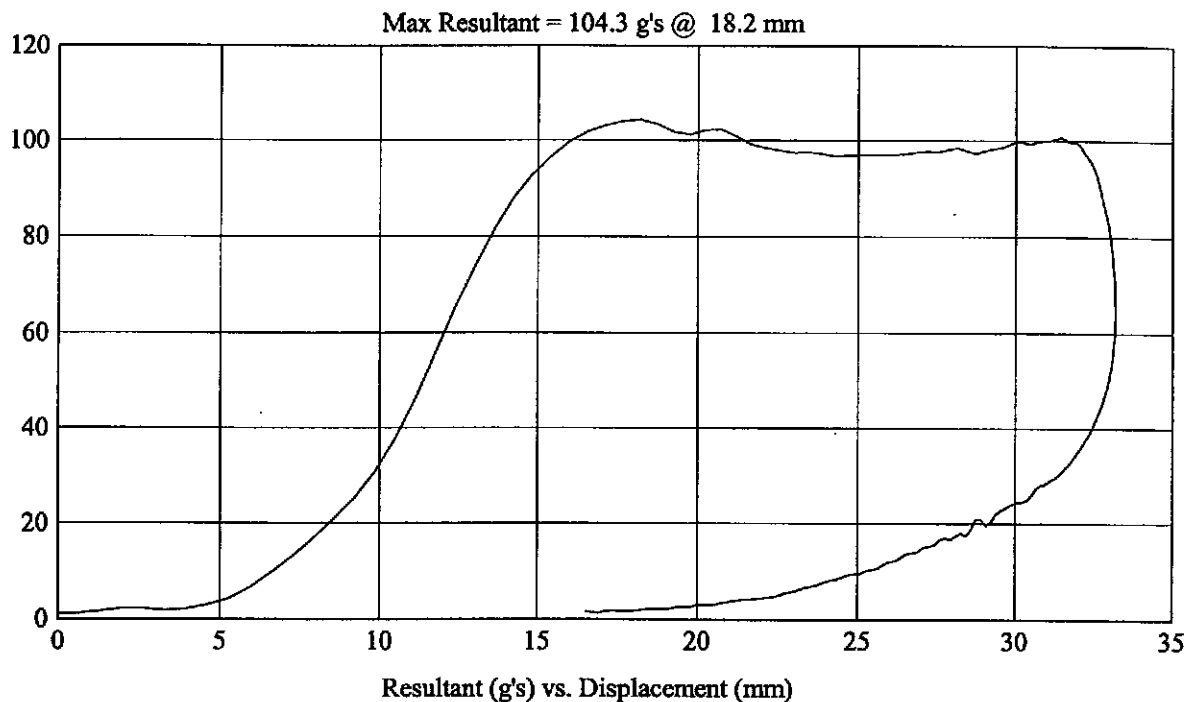
*Only necessary for NHTSA (Government) Compliance testing.

FMH
G04I7-001.6Customer: CHEVY
Test # 3
FM4083
Additional Desc: N/A

Vehicle Program : COLORADO LS

Model Year: 2004
Target: AP1
Vehicle Side: Right
Horz/Vert Angle: 159/49

HIC(d) = 624, HIC = 607, Delta T = 7.7 msec

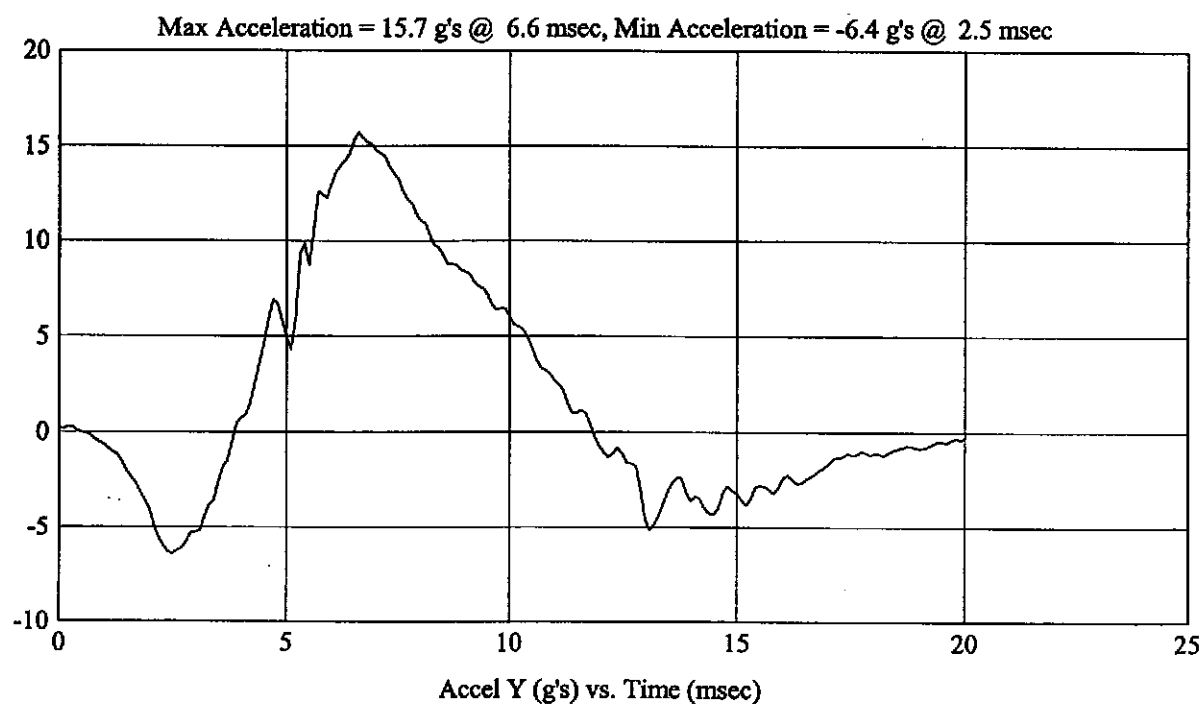
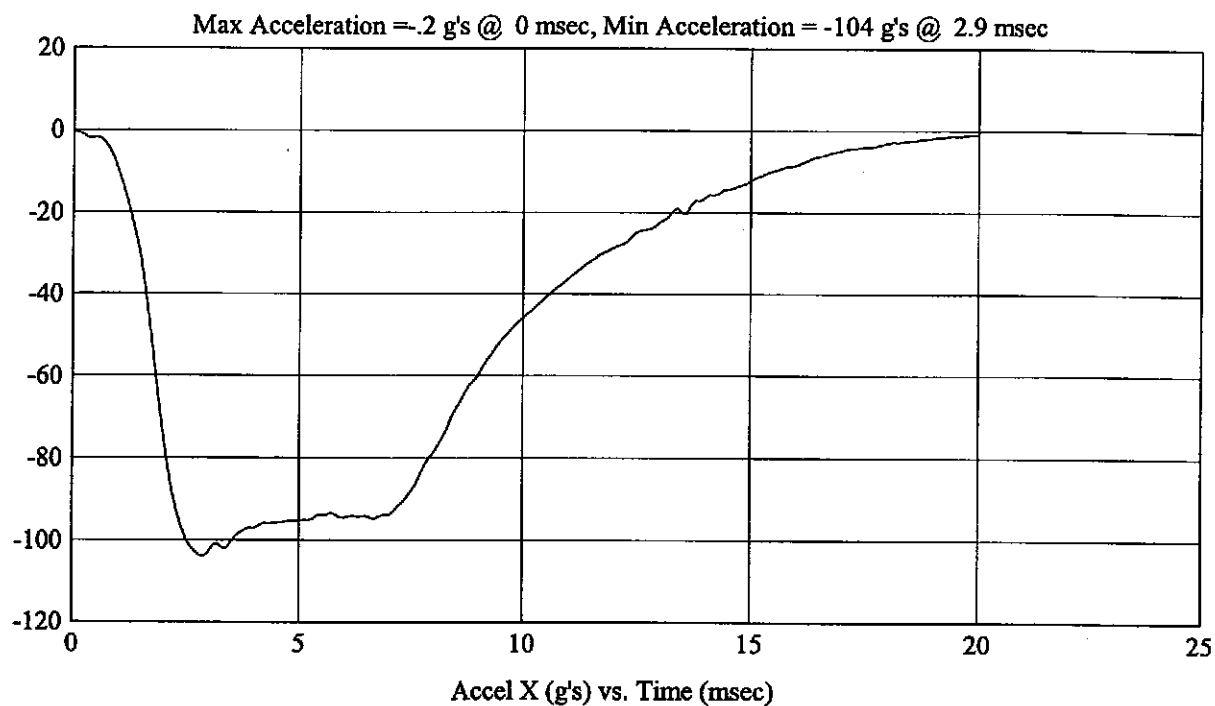


FMH
G04I7-001.6Customer: CHEVY
Test # 3
FM4083
Additional Desc: N/A

Vehicle Program : COLORADO LS

Model Year: 2004
Target: AP1
Vehicle Side: Right
Horz/Vert Angle: 159/49

HIC(d) = 624, HIC = 607, Delta T = 7.7 msec



FMH
G0417-001.6

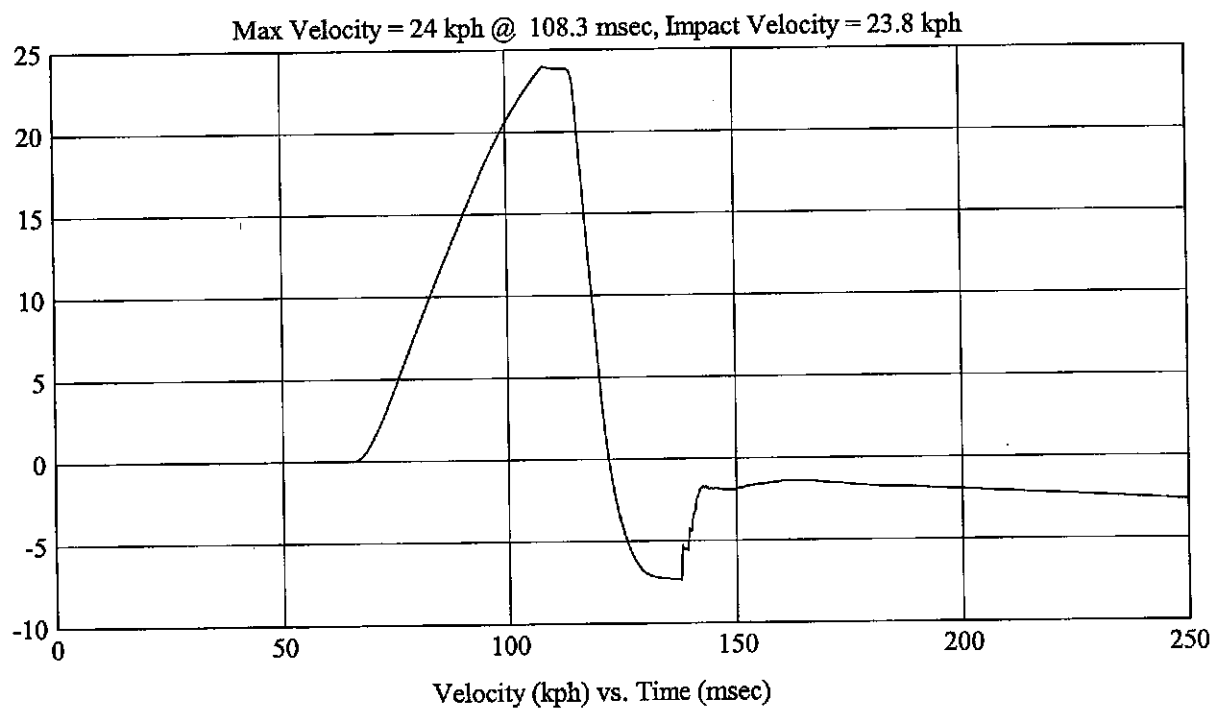
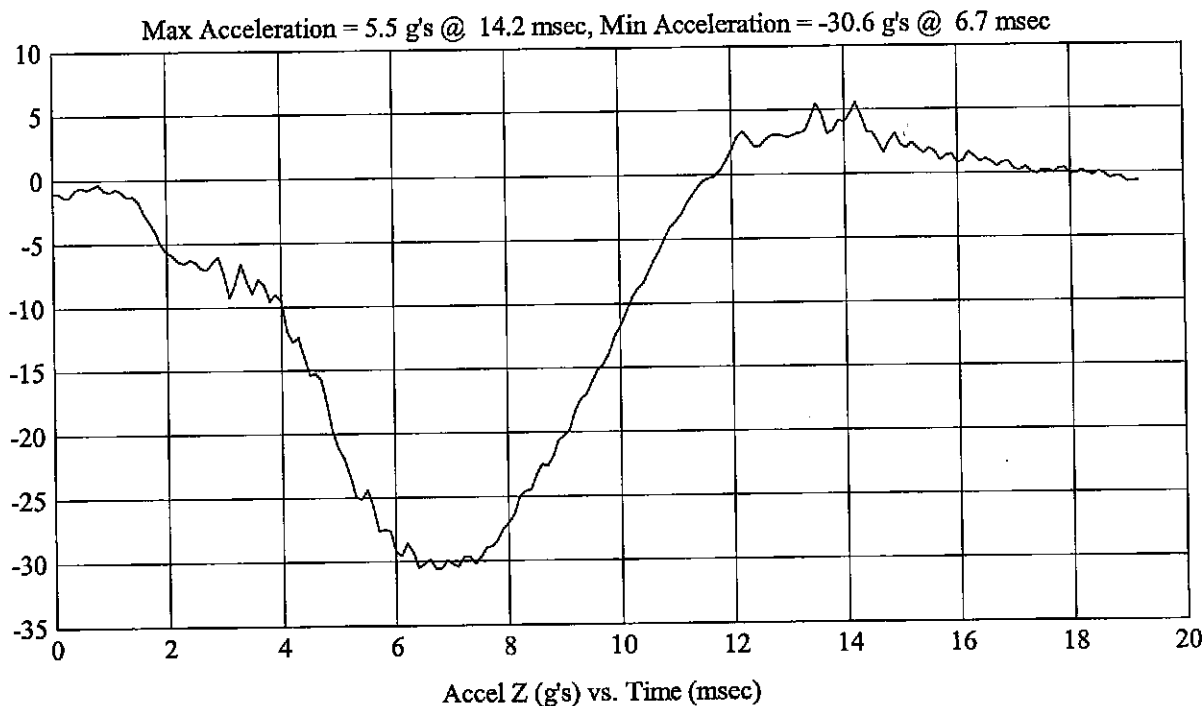
Customer: CHEVY
Test # 3
FM4083
Additional Desc: N/A

Vehicle Program : COLORADO LS

Test Date: 4/13/04

Model Year: 2004
Target: AP1
Vehicle Side: Right
Horz/Vert Angle: 159/49

HIC(d) = 624, HIC = 606, Delta T = 7.7 msec



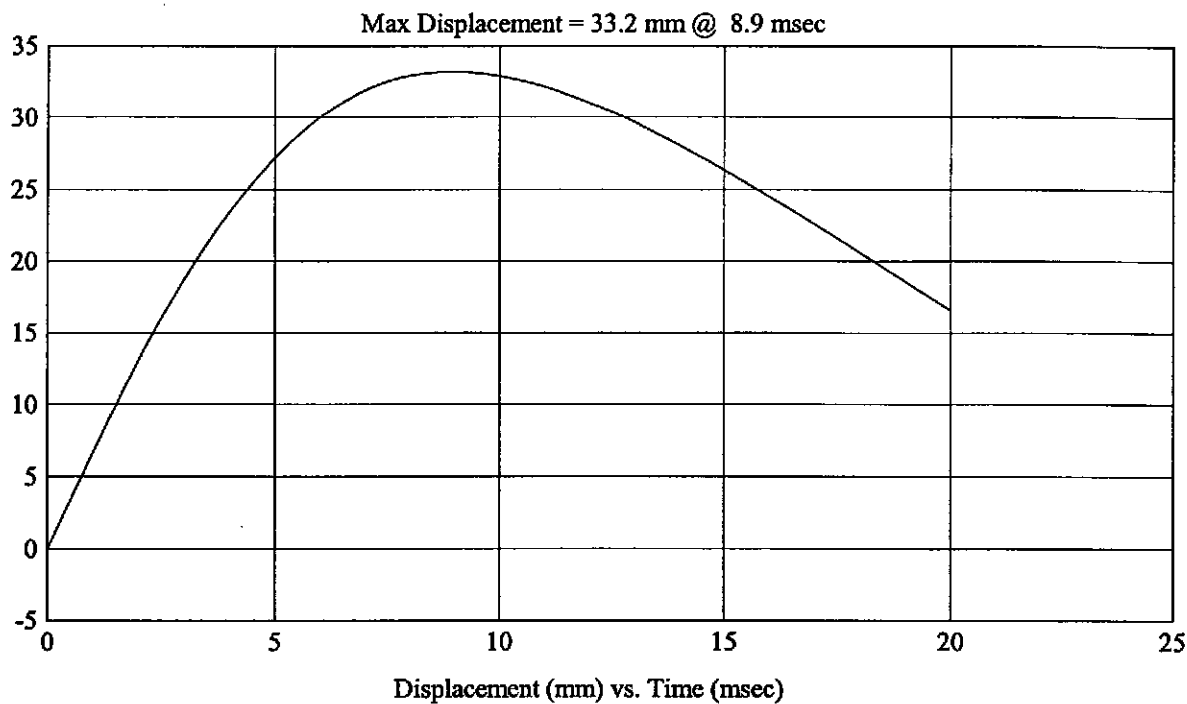
FMH
G04I7-001.6

Customer: CHEVY
Test # 3
FM4083
Additional Desc: N/A

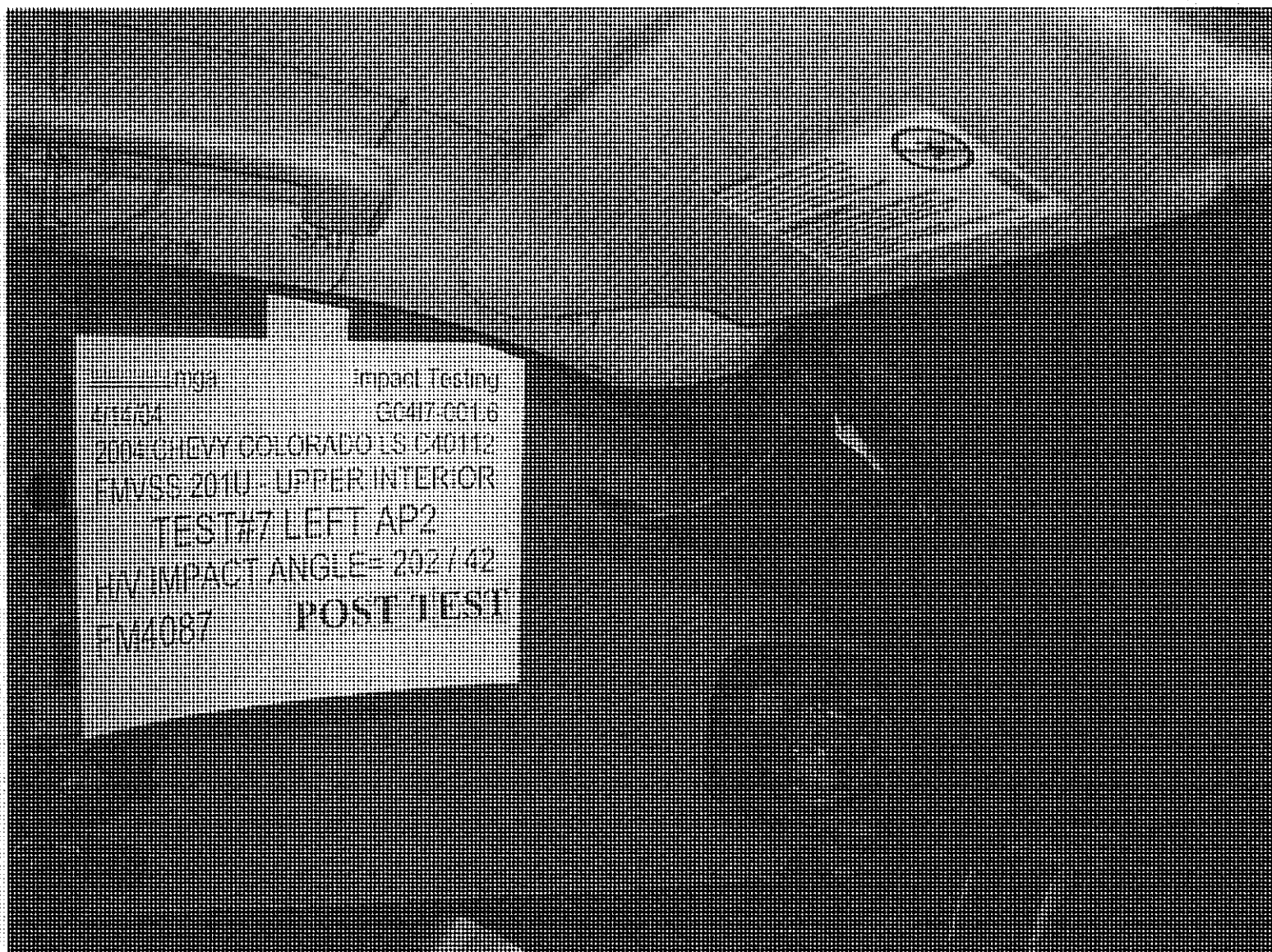
Vehicle Program : COLORADO LS

Model Year: 2004
Target: AP1
Vehicle Side: Right
Horz/Vert Angle: 159/49

HIC(d) = 624, HIC = 607, Delta T = 7.7 msec



Impact Testing
G0417-001.6
2004 CHRYSLER COLORADO LS C40112
FWSS 201U - UPPER INTERIOR
TEST#7 LEFT AP2
IMPACT ANGLE = 20° / 42°
PRE-TEST
CAH087



===== 709a Impact Testing
4/14/04 G0417-0011.6
2004 CHEVY COLORADO LS C40112
FMVSS 201U - UPPER INTERIOR
TEST#7 LEFT AP2
HV IMPACT ANGLE= 202 / 42
FM4087 POST TEST

MICHIGAN OPERATIONS
DATE: 3/20/03
SUPERCEDES: MGATP201U_FRAME #2.4

DOC. NO.: MGATP201U_FRAME #2
REVISION NO.: 5
PAGE 9 OF 9

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: C40112 VEHICLE YR/MAKE/MODEL: 2004 CHRY COLOMBO

GENERAL TEST PARAMETERS:

Test Number: 8
Target (Vehicle Side): Left APZ Temperature: 23 °F/0
MGA Test Reference No.: FM4097 Humidity: 20 %
Approach Angles: Horizontal 202 ° Time of Test: 9:45 am/pm
Vertical 42 ° FMH Serial No: 38

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
<u>461</u>	<u>390</u>	<u>10.4</u>	<u>23.6</u>	<u>13</u>	<u>4</u>

INSTRUMENTAION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
<u>X</u>	<u>5</u>	<u>J36197</u>	<u>-107.3</u>	<u>1.20</u>	<u>1.20</u>
<u>Y</u>	<u>6</u>	<u>J36193</u>	<u>101.1</u>	<u>1.23</u>	<u>1.23</u>
<u>Z</u>	<u>7</u>	<u>J36353</u>	<u>92.1</u>	<u>1.51</u>	<u>1.51</u>

REMARKS (Summary of test, damage, non-compliance, invalid test, etc.): _____

A-PILLAR TRIM SEPARATED DUE TO IMPACT

Recorded By: [Signature] Approved By: [Signature] Date: 4/14/04

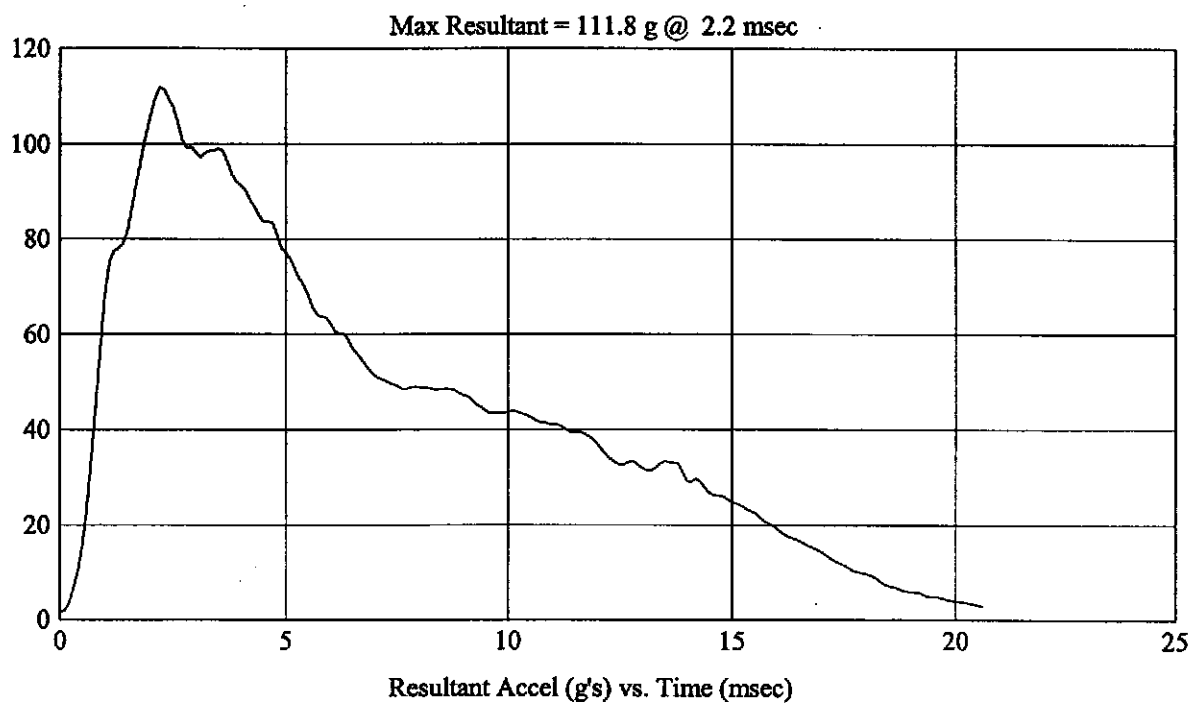
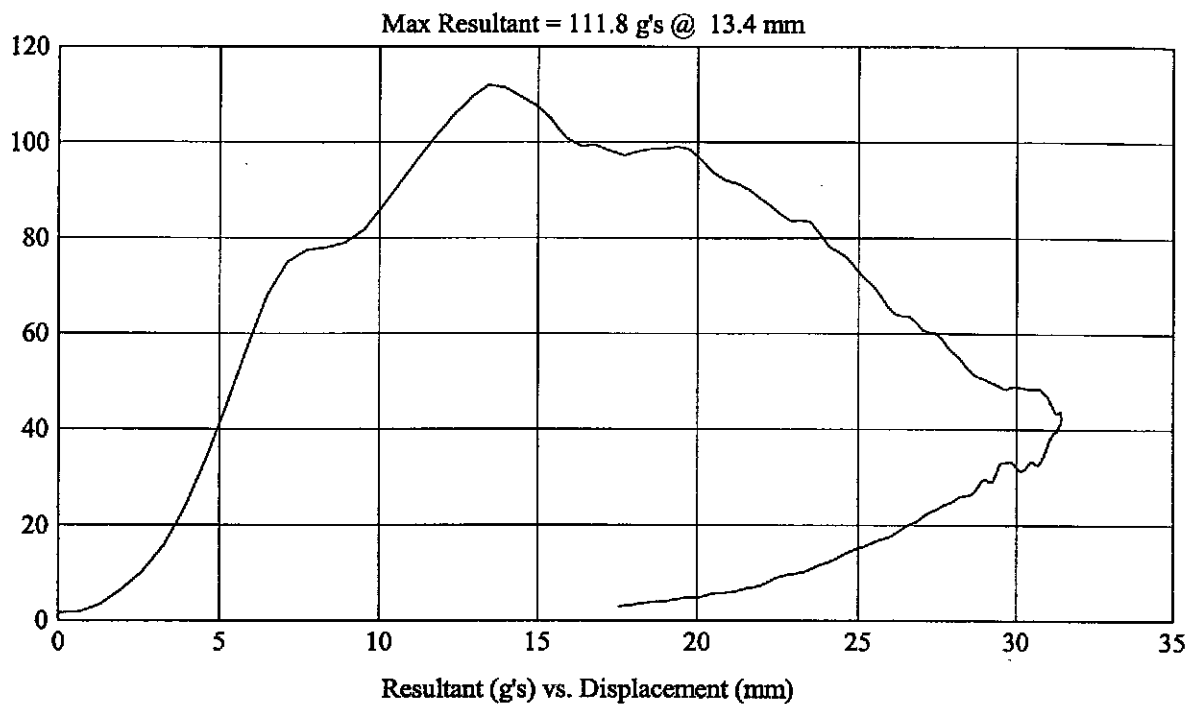
*Only necessary for NHTSA (Government) Compliance testing.

FMH
G04I7-001.6Customer: CHEVY
Test # 7
FM4087
Additional Desc: N/A

Vehicle Program : COLORADO LS

Model Year: 2004
Target: AP2
Vehicle Side: Left
Horz/Vert Angle: 202/42

HIC(d) = 461, HIC = 390, Delta T = 10.4 msec

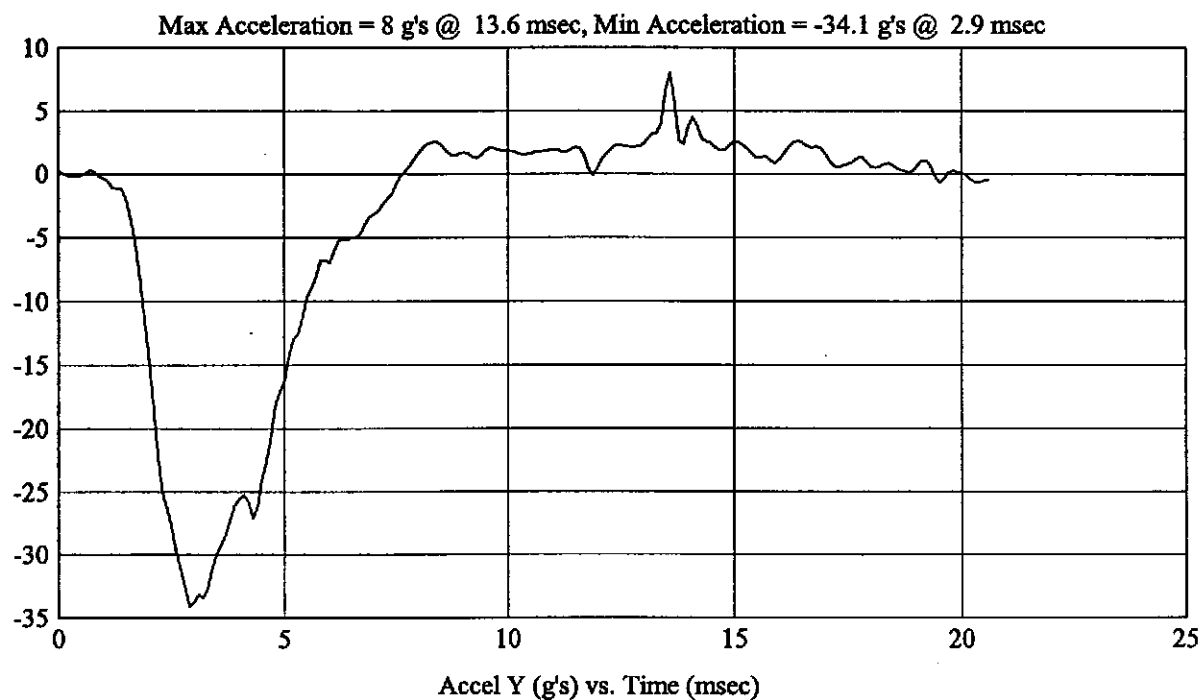
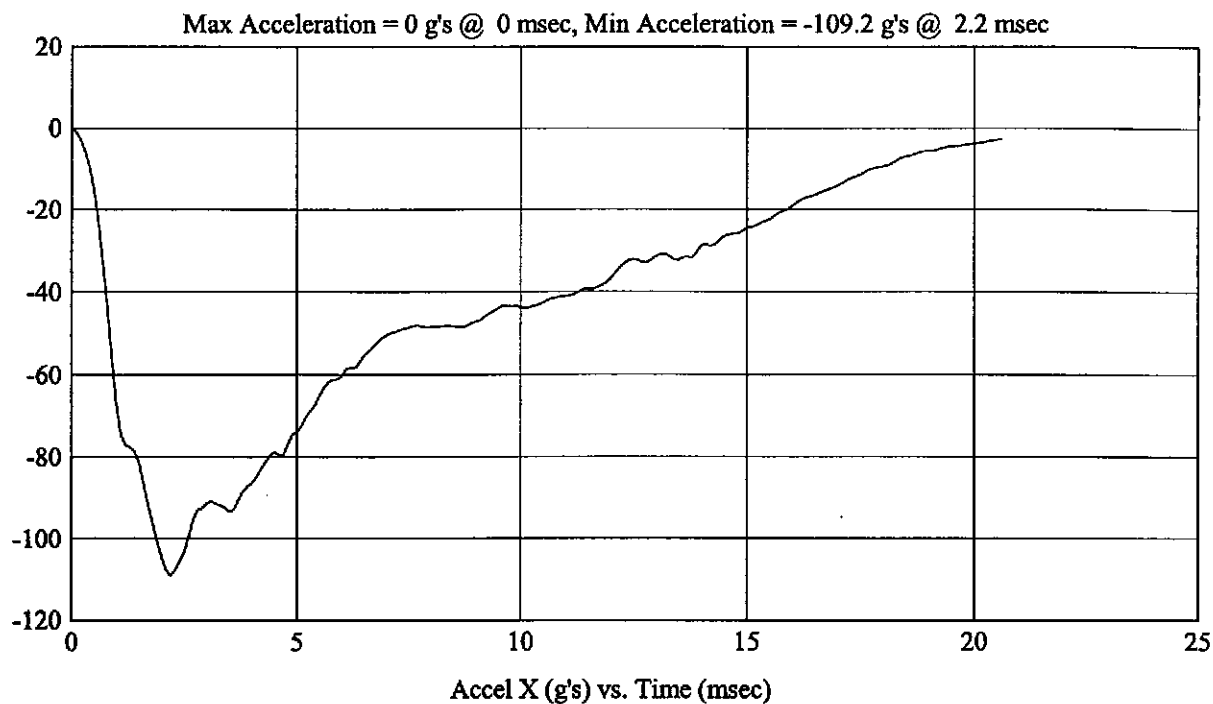


FMH
G04I7-001.6Customer: CHEVY
Test # 7
FM4087
Additional Desc: N/A

Vehicle Program : COLORADO LS

Model Year: 2004
Target: AP2
Vehicle Side: Left
Horz/Vert Angle: 202/42

HIC(d) = 461, HIC = 390, Delta T = 10.4 msec



FMH
G04I7-001.6

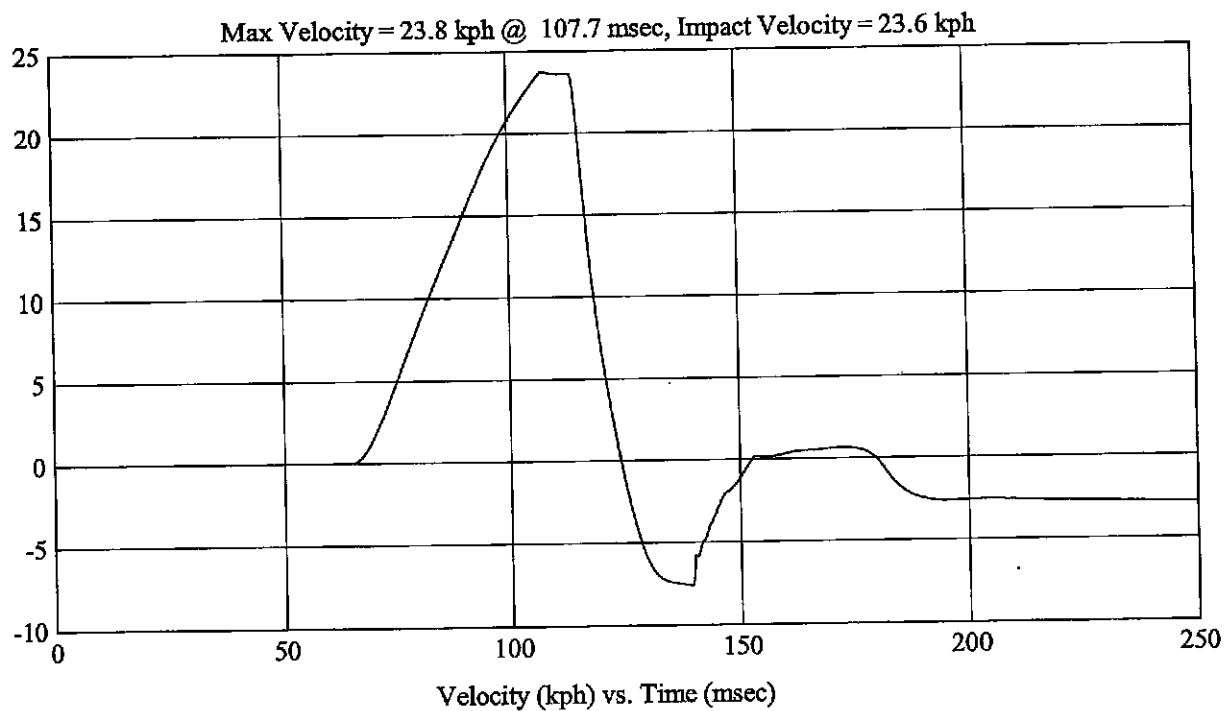
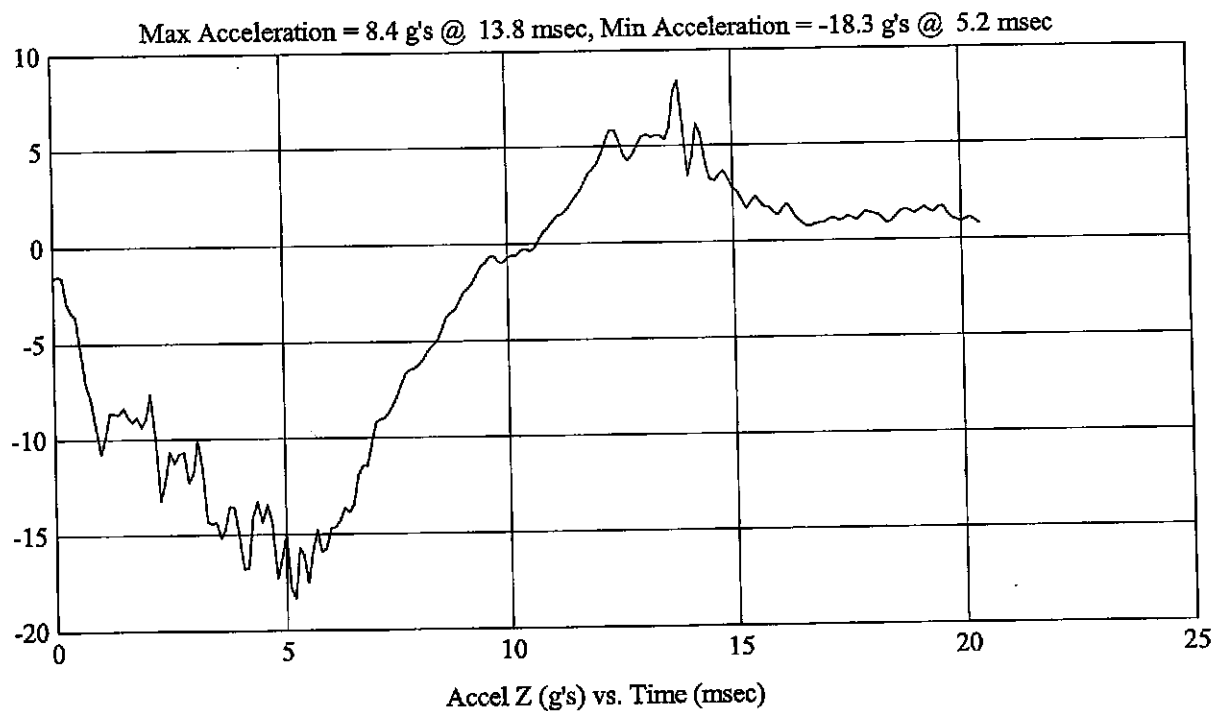
Customer: CHEVY
Test # 7
FM4087
Additional Desc: N/A

Vehicle Program : COLORADO LS

Test Date: 4/14/04

Model Year: 2004
Target: AP2
Vehicle Side: Left
Horz/Vert Angle: 202/42

HIC(d) = 461, HIC = 390, Delta T = 10.4 msec



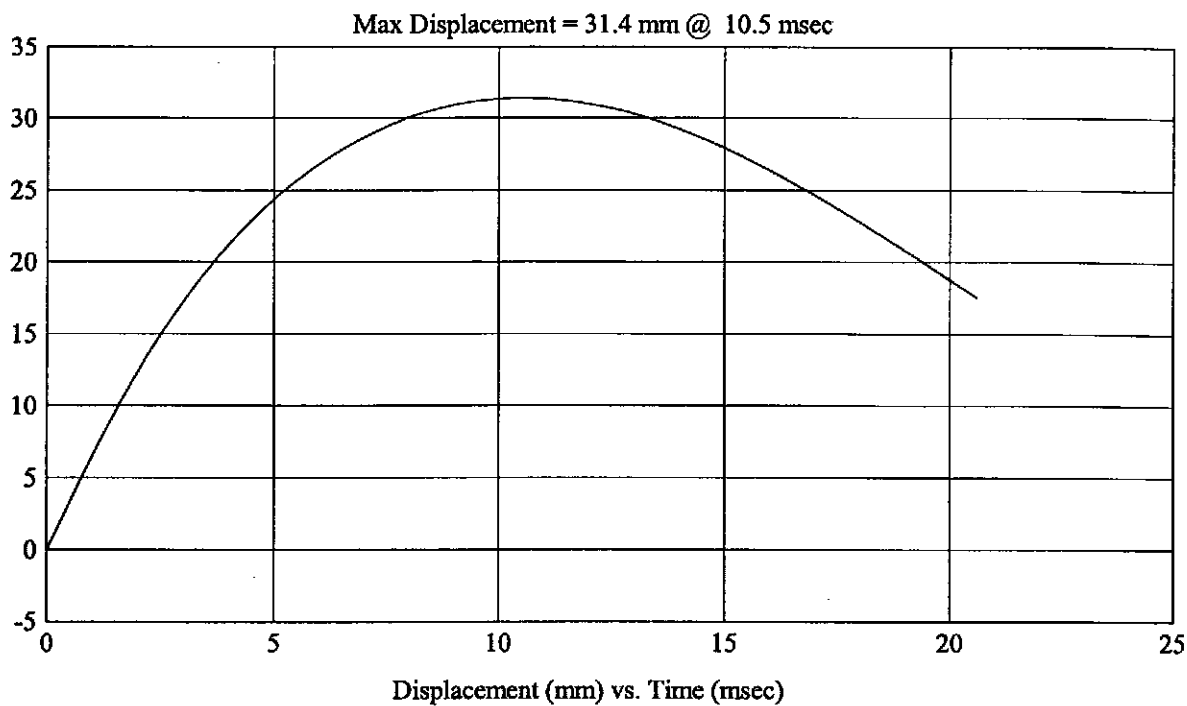
FMH
G04I7-001.6

Customer: CHEVY
Test # 7
FM4087
Additional Desc: N/A

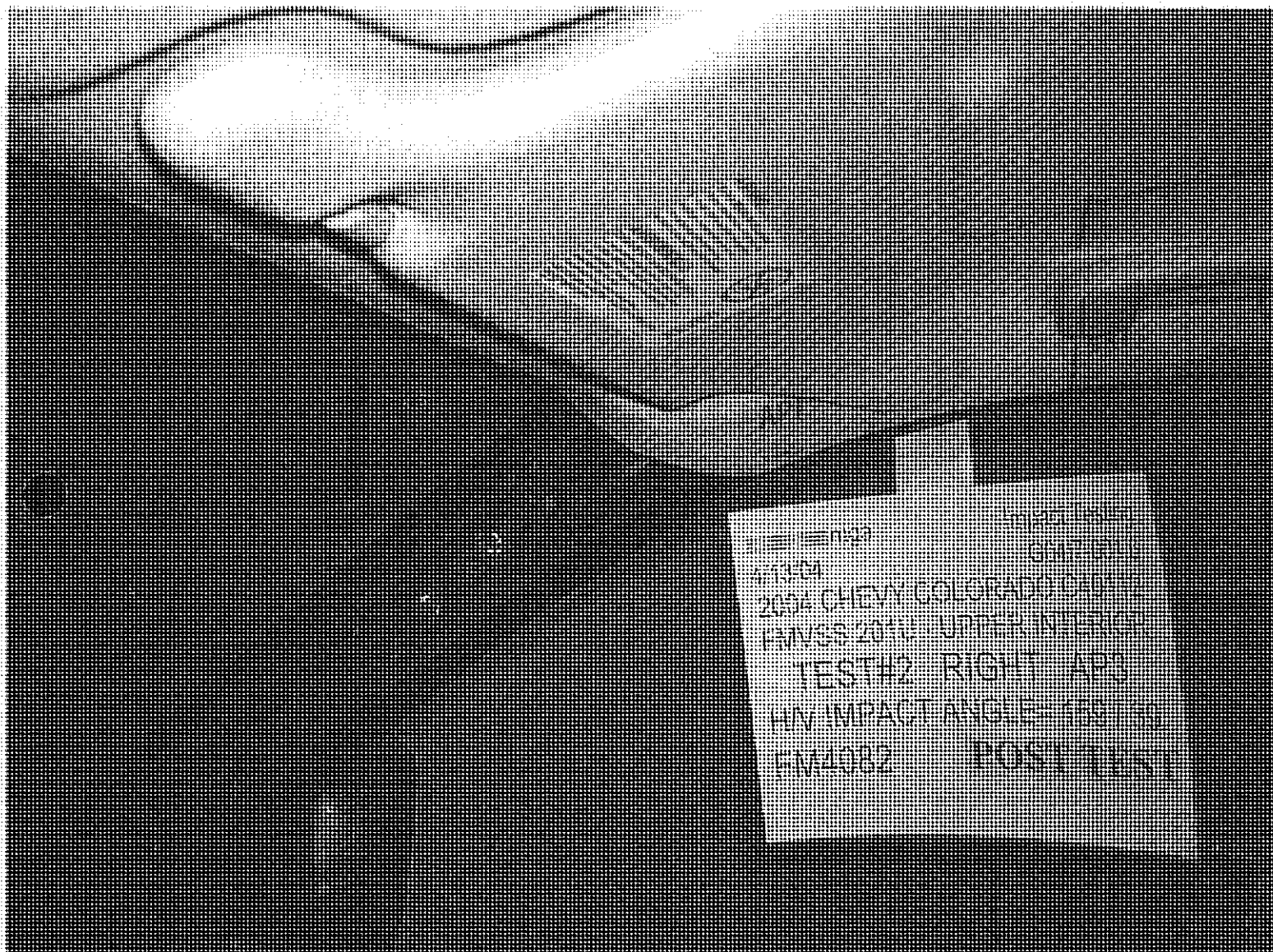
Vehicle Program : COLORADO LS

Model Year: 2004
Target: AP2
Vehicle Side: Left
Horz/Vert Angle: 202/42

HIC(d) = 461, HIC = 390, Delta T = 10.4 msec



TIME: 11:58:10
4/13/04 0047-0012
2004 CHEVY COLORADO 040712
FMVSS 2010 - UPPER INTERIOR
TEST#2 RIGHT AP3
HV IMPACT ANGLE = 159/80
FM4082 PRE-TEST



039 Impact Testing
4/13/04 G0417-0016
2004 CHEVY COLORADO C40112
FMVSS 2010U - UPPER INTERIOR
TEST#2 RIGHT AP3
HV IMPACT ANGLE= 159 / 39
FM4082 POST TEST

MICHIGAN OPERATIONS
DATE: 3/20/03
SUPERCEDES: MGATP201U_FRAME #2.4

DOC. NO.: MGATP201U_FRAME #2
REVISION NO.: 5
PAGE 9 OF 9

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: C40112 VEHICLE YR/MAKE/MODEL: 2004 CITEN COLORED LS

GENERAL TEST PARAMETERS:

Test Number: 2
Target (Vehicle Side): left/right AP3 Temperature: 24 °F/°C
MGA Test Reference No.: FM4082 Humidity: 33 %
Approach Angles: Horizontal 159 ° Time of Test: 1:37 am/pm
Vertical 39 ° FMH Serial No: 37

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
667	664	4.0	23.5	12	3

INSTRUMENTAION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	3	J35800	- 95.9	1.20	1.20
Y	6	J35841	92.0	1.23	1.23
Z	7	J35791	89.3	1.51	1.51

REMARKS (Summary of test, damage, non-compliance, invalid test, etc.):

A. Pillar WAS SEPARATION FROM THE PILLAR

Recorded By: [Signature] Approved By: Heleen A. Kaldo Date: 4/13/04

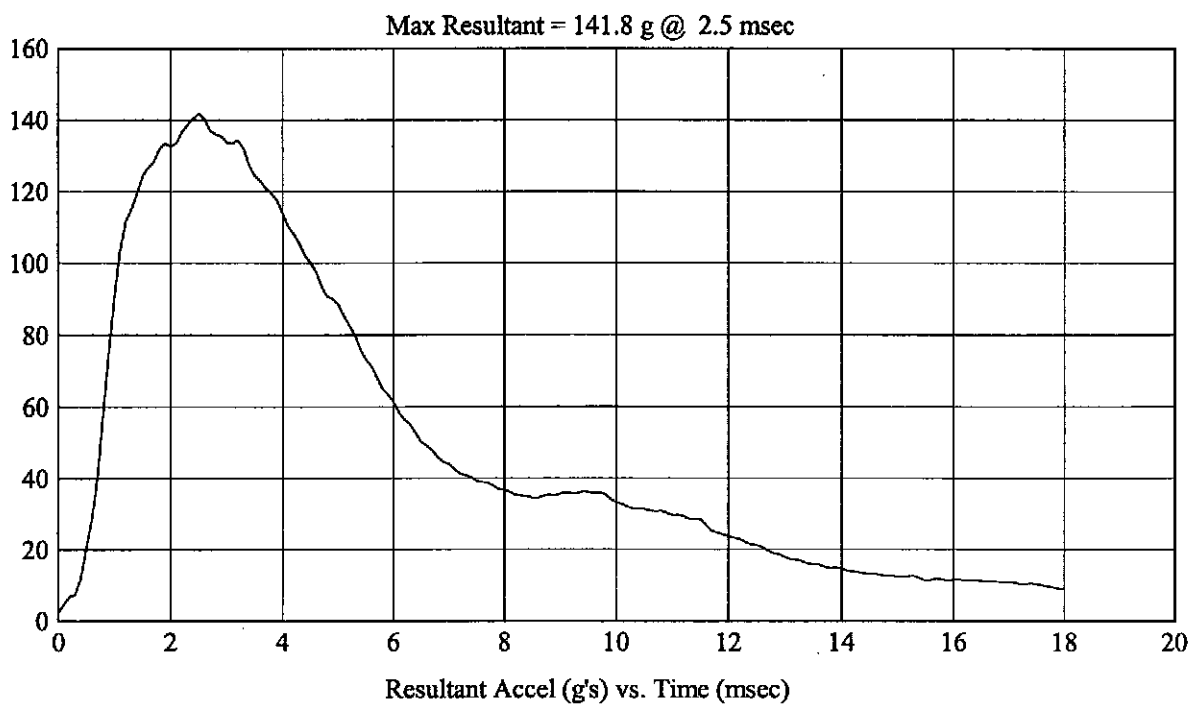
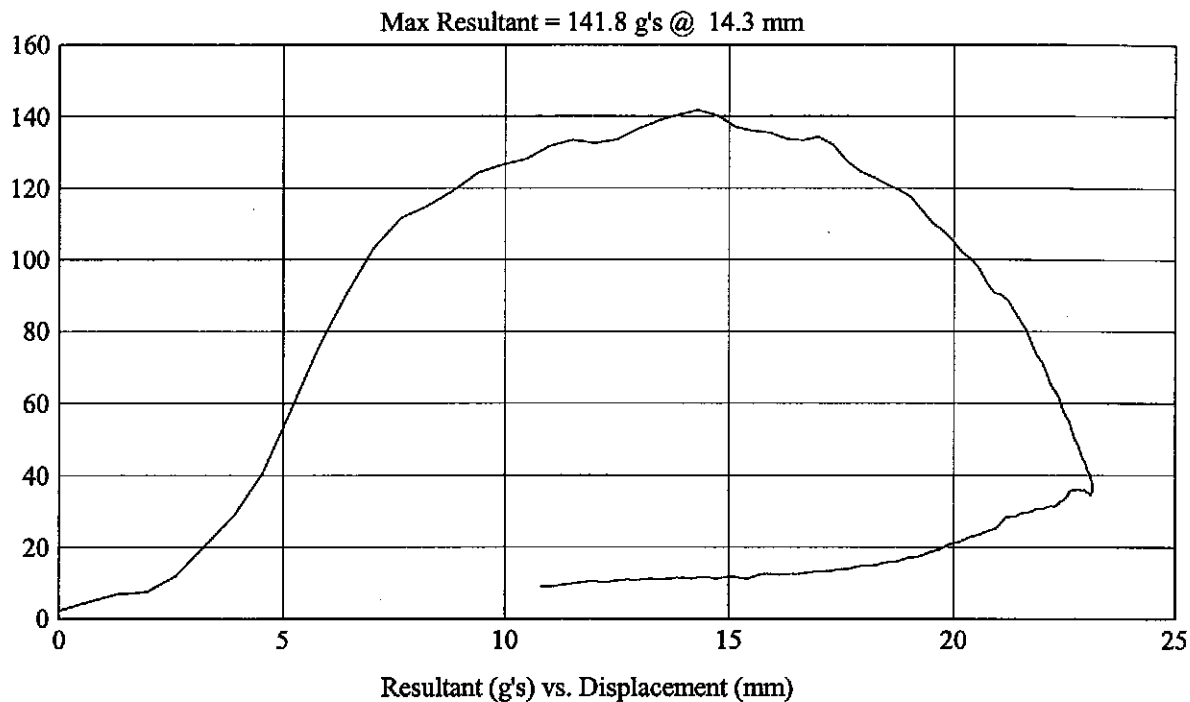
*Only necessary for NHTSA (Government) Compliance testing.

FMH
G04I7-001.6Customer: CHEVY
Test # 2
FM4082
Additional Desc: N/A

Vehicle Program : COLORADO

Model Year: 2004
Target: AP3
Vehicle Side: Right
Horz/Vert Angle: 159/39

HIC(d) = 667, HIC = 664, Delta T = 4.8 msec



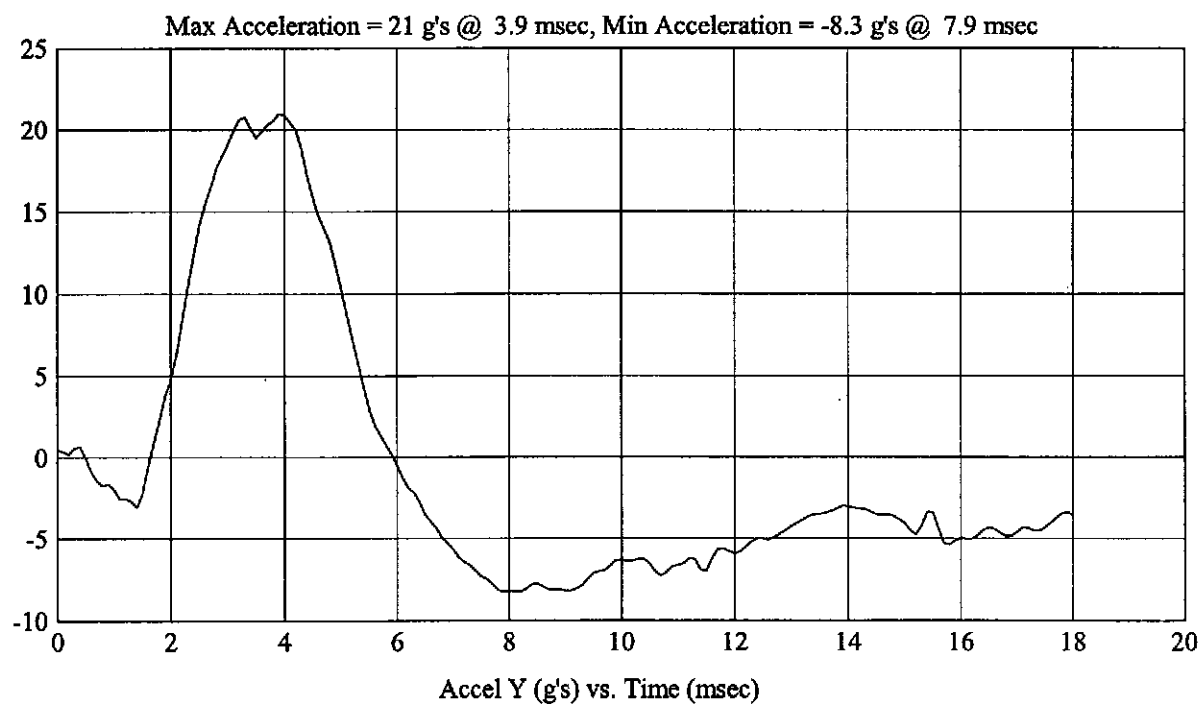
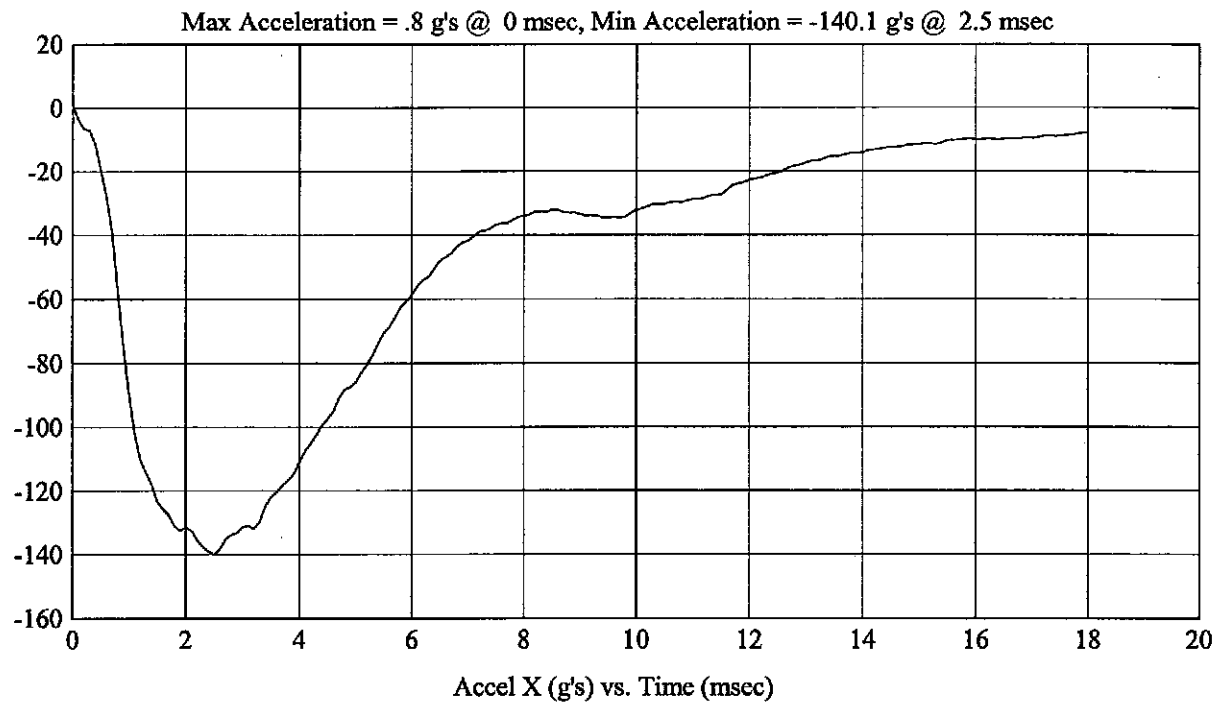
FMH
G04I7-001.6

Customer: CHEVY
Test # 2
FM4082
Additional Desc: N/A

Vehicle Program : COLORADO

Model Year: 2004
Target: AP3
Vehicle Side: Right
Horz/Vert Angle: 159/39

HIC(d) = 667, HIC = 664, Delta T = 4.8 msec



FMH
G04I7-001.6

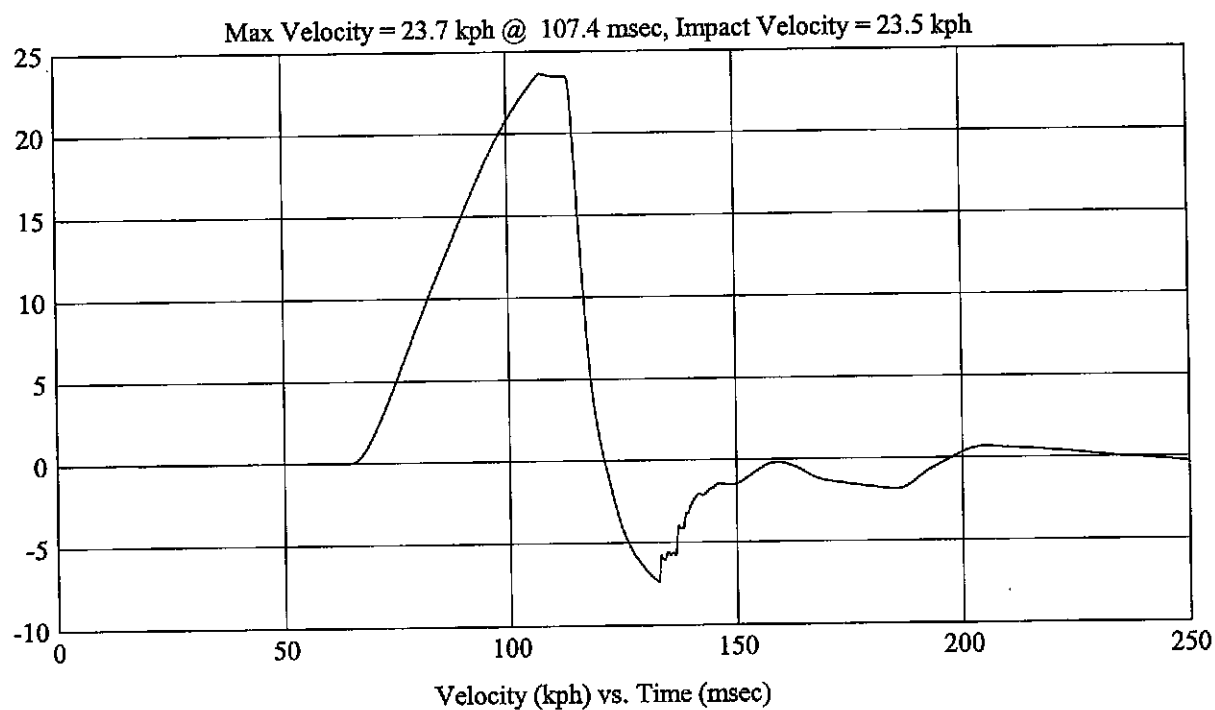
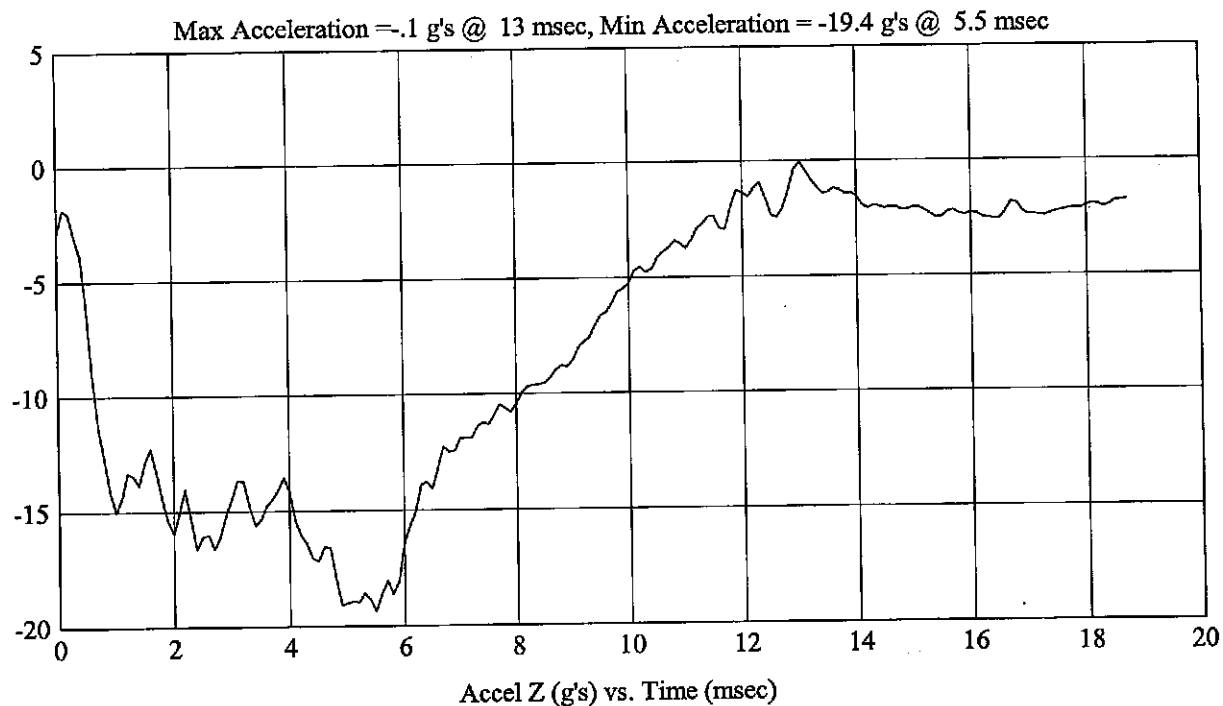
Customer: CHEVY
Test # 2
FM4082
Additional Desc: N/A

Vehicle Program : COLORADO

Test Date: 4/13/04

Model Year: 2004
Target: AP3
Vehicle Side: Right
Horz/Vert Angle: 159/39

HIC(d) = 667, HIC = 664, Delta T = 4.8 msec



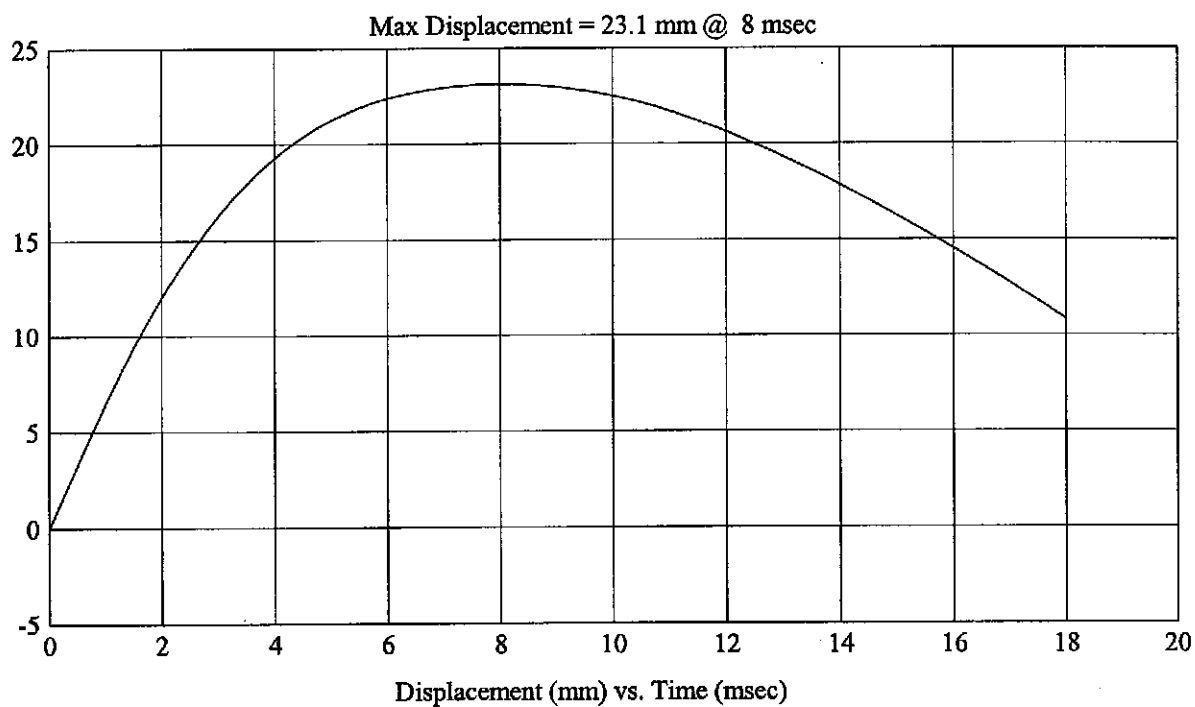
FMH
G04I7-001.6

Customer: CHEVY
Test # 2
FM4082
Additional Desc: N/A

Vehicle Program : COLORADO

Model Year: 2004
Target: AP3
Vehicle Side: Right
Horz/Vert Angle: 159/39

HIC(d) = 667, HIC = 664, Delta T = 4.8 msec



mga

Impact Testing

4/14/04

G0417-001.6

2004 CHEVY COLORADO LS C40112

FMVSS 201U - UPPER INTERIOR

TEST #9 LEFT BP1

H/V IMPACT ANGLE= 270 / 28

FM4089

PRE-TEST

=====mgc Impact Testing
4/14/04 G0417-001-6
2004 CHEVY COLORADO LS C40112
FMVSS 201U - UPPER INTERIOR
TEST #9 LEFT BP1
H/V IMPACT ANGLE= 270 / 28
FM4089 POST TEST

Impact Testing
G0417-001.6
2004 CHEVY COLORADO LS C40012
FMVSS 201U - UPPER INTERIOR
TEST #9 LEFT BP1
HIV IMPACT ANGLE= 270 / 28
FM4089 POST TEST

MICHIGAN OPERATIONS
DATE: 3/20/03
SUPERCEDES: MGATP201U_FRAME #2.4

DOC. NO.: MGATP201U_FRAME #2
REVISION NO.: 5
PAGE 9 OF 9

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: C40112 VEHICLE YR/MAKE/MODEL: 2004 Chevy Cavalier LS

GENERAL TEST PARAMETERS:

Test Number: 9

Target (Vehicle Side): Left/Right RPI

Temperature: 24 °F 10

MGA Test Reference No.: FM4089

Humidity: 20 %

Approach Angles: Horizontal 270 °

Time of Test: 1:25 am pm

Vertical 28 °

FMH Serial No: 35

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
<u>620</u>	<u>601</u>	<u>8.6</u>	<u>23.8</u>	<u>12</u>	<u>6</u>

INSTRUMENTAION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
<u>X</u>	<u>5</u>	<u>J35924</u>	<u>-91.8</u>	<u>1.20</u>	<u>1.20</u>
<u>Y</u>	<u>6</u>	<u>J35919</u>	<u>93.5</u>	<u>1.23</u>	<u>1.23</u>
<u>Z</u>	<u>7</u>	<u>J31081</u>	<u>93.5</u>	<u>1.51</u>	<u>1.51</u>

REMARKS (Summary of test, damage, non-compliance, invalid test, etc.): _____

No Visible Damage

Recorded By: [Signature]

Approved By: [Signature]

Date: 4/14/04

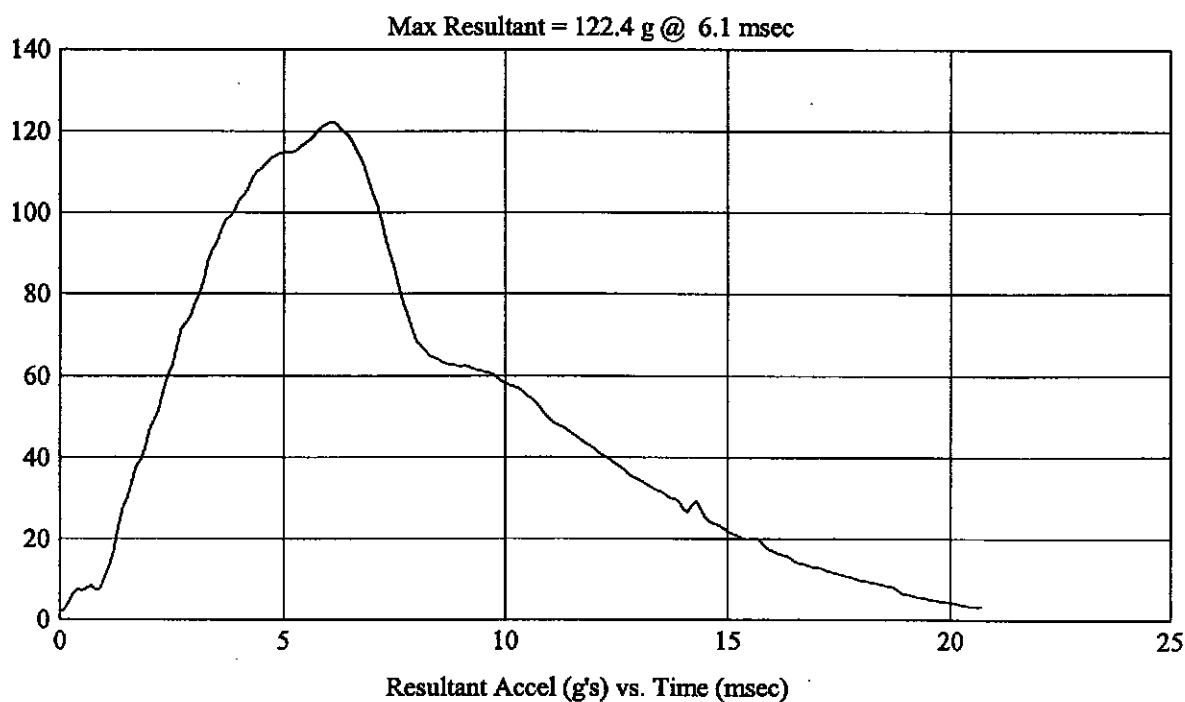
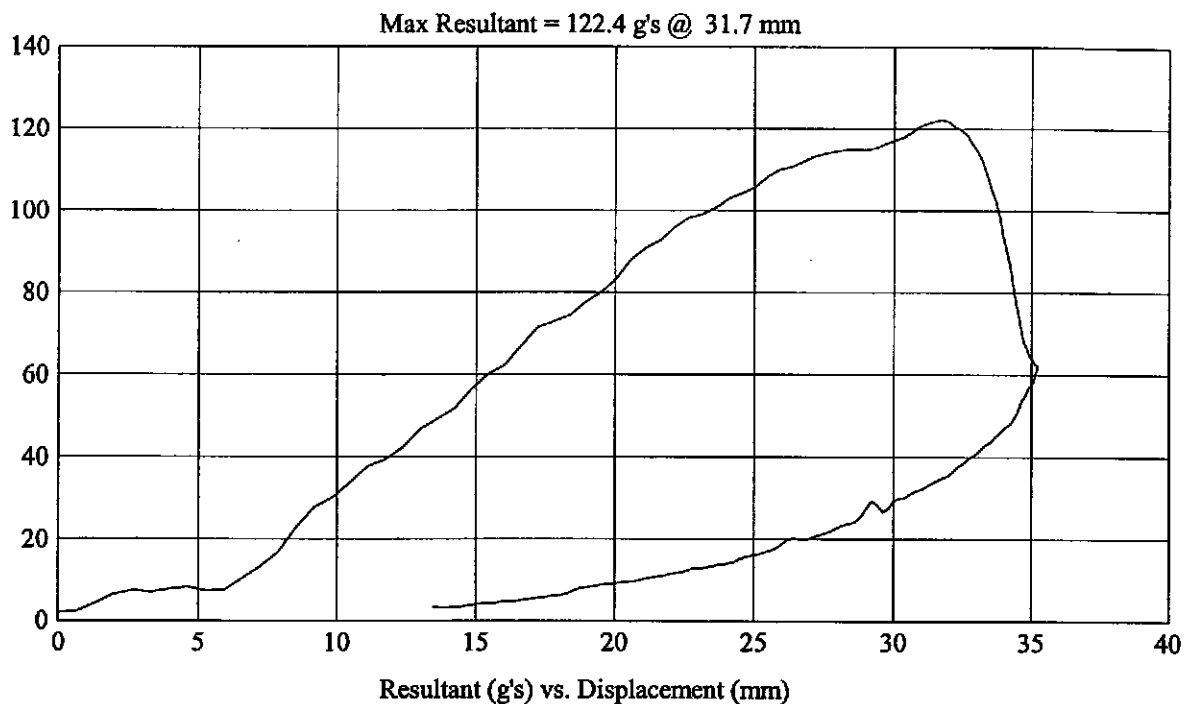
*Only necessary for NHTSA (Government) Compliance testing.

FMH
G04I7-001.6Customer: CHEVY
Test # 9
FM4089
Additional Desc: N/A

Vehicle Program : COLORADO LS

Model Year: 2004
Target: BP1
Vehicle Side: Left
Horz/Vert Angle: 270/28

HIC(d) = 620, HIC = 601, Delta T = 8.6 msec

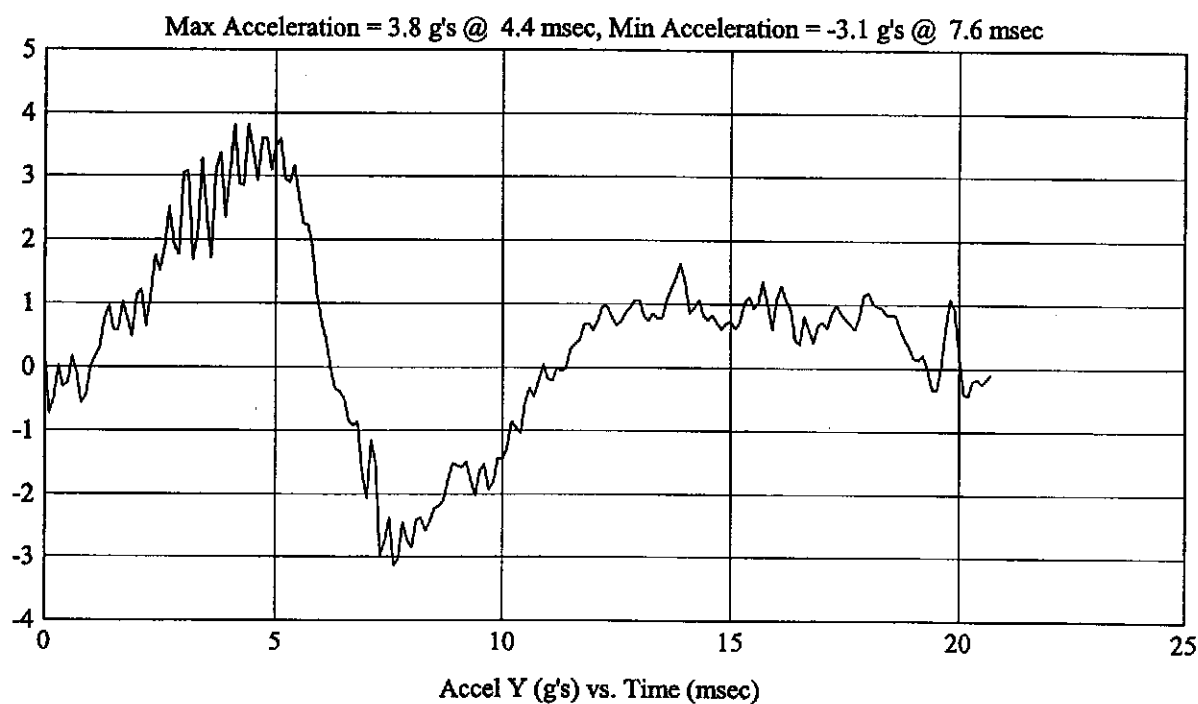
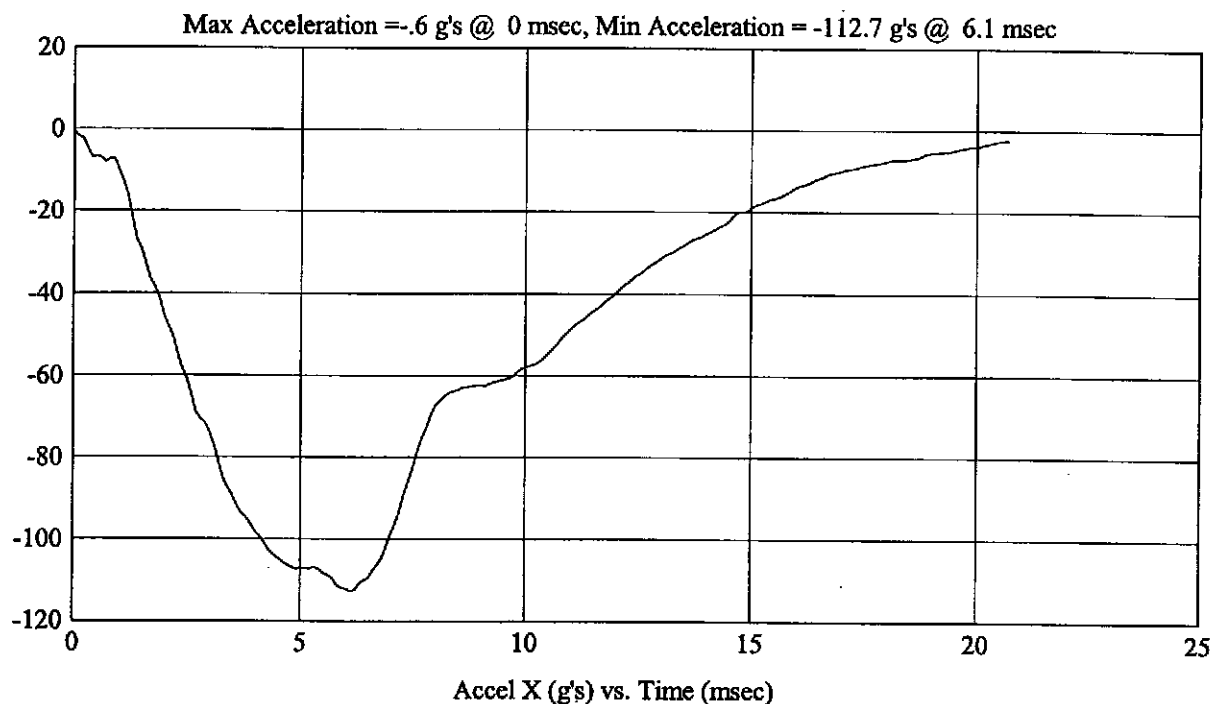


FMH
G04I7-001.6Customer: CHEVY
Test # 9
FM4089
Additional Desc: N/A

Vehicle Program : COLORADO LS

Model Year: 2004
Target: BP1
Vehicle Side: Left
Horz/Vert Angle: 270/28

HIC(d) = 620, HIC = 601, Delta T = 8.6 msec



FMH
G04I7-001.6

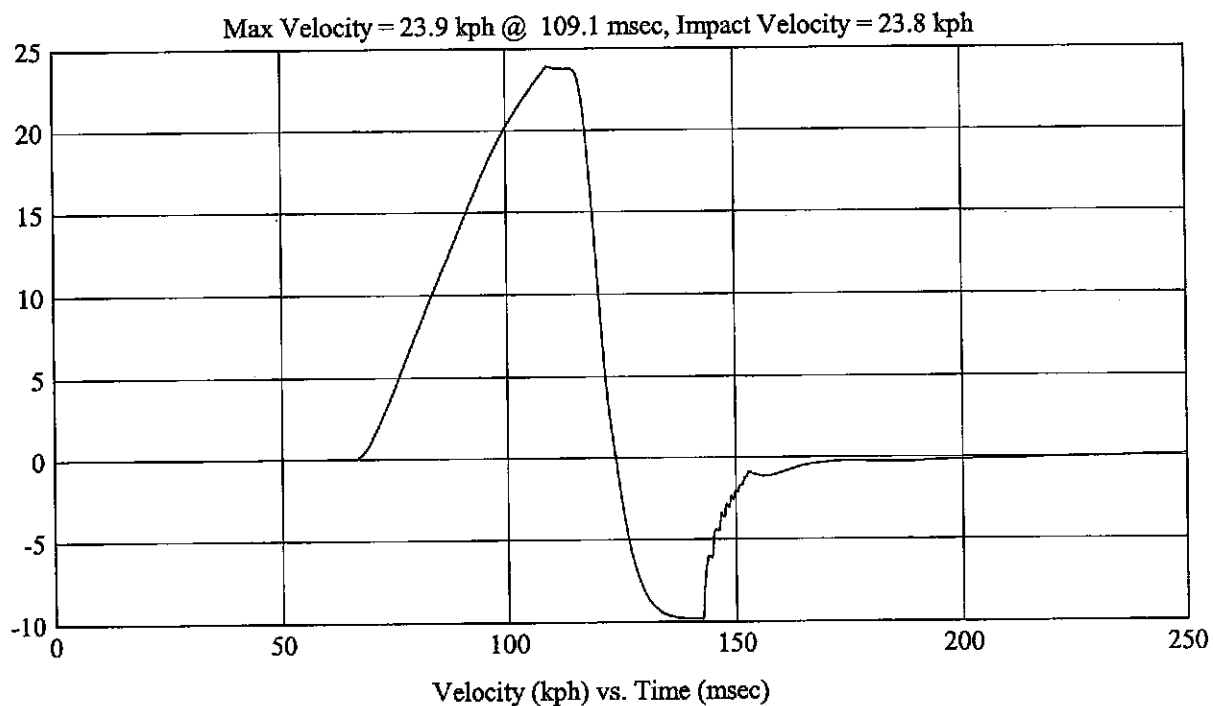
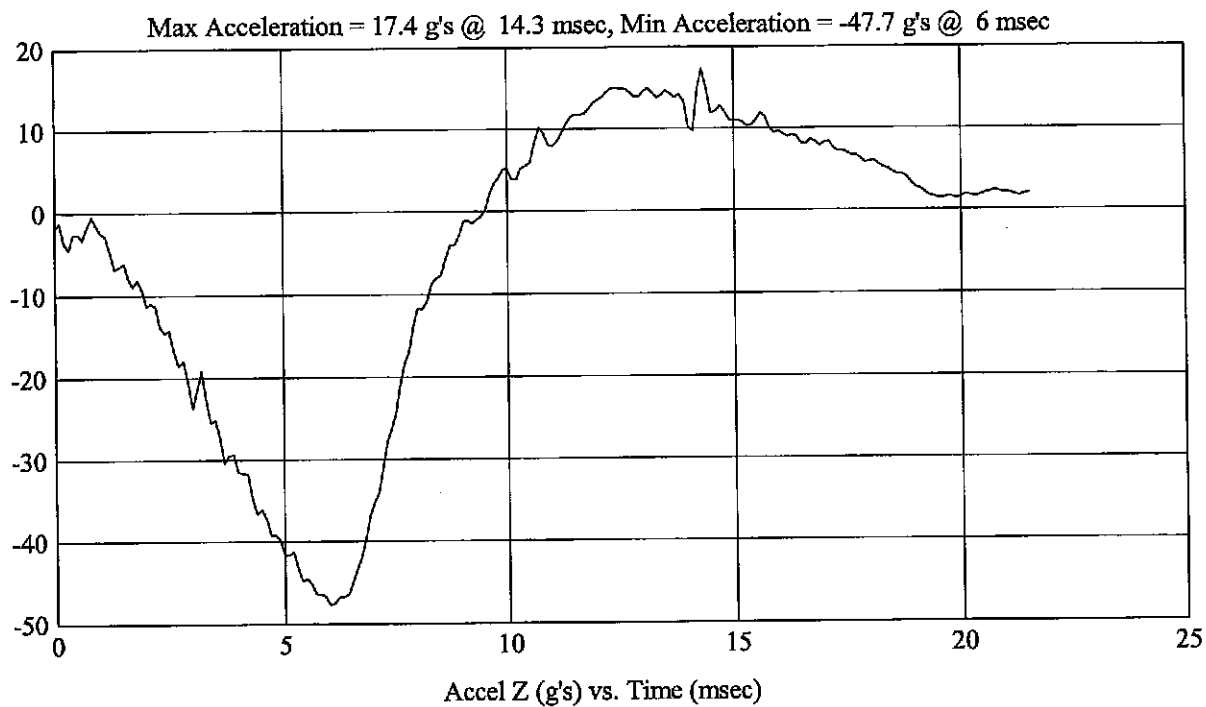
Customer: CHEVY
Test # 9
FM4089
Additional Desc: N/A

Vehicle Program : COLORADO LS

Test Date: 4/14/04

Model Year: 2004
Target: BP1
Vehicle Side: Left
Horz/Vert Angle: 270/28

HIC(d) = 620, HIC = 602, Delta T = 8.6 msec



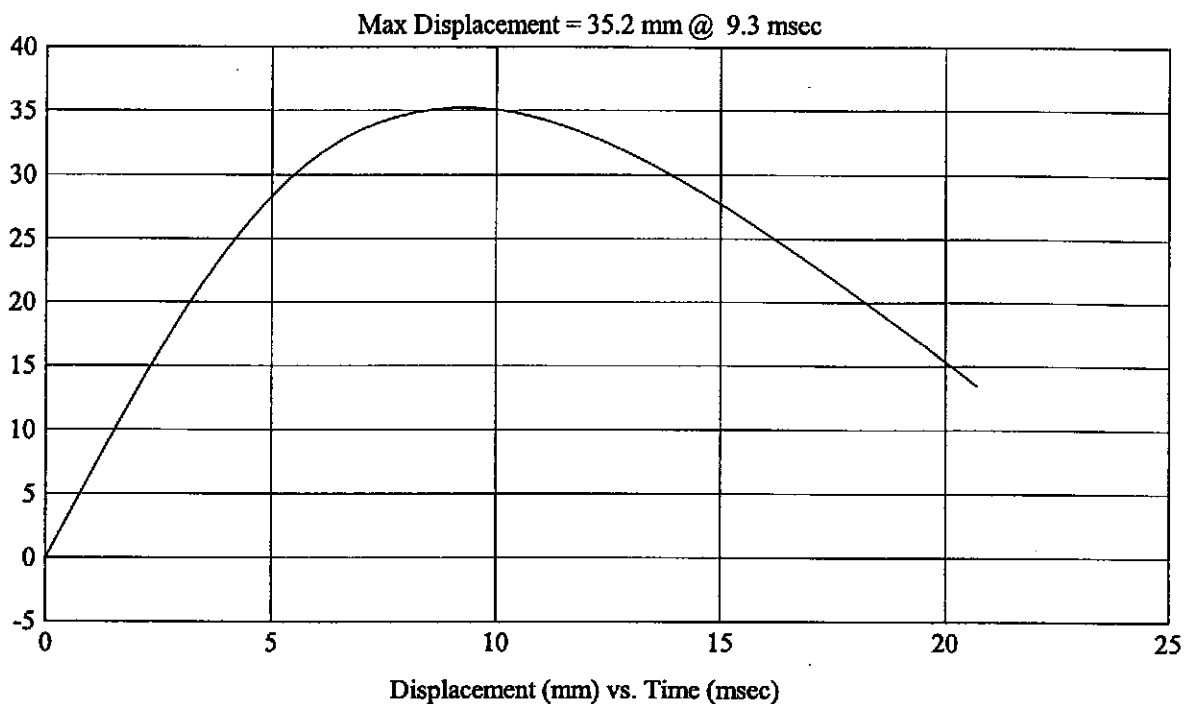
FMH
G04I7-001.6

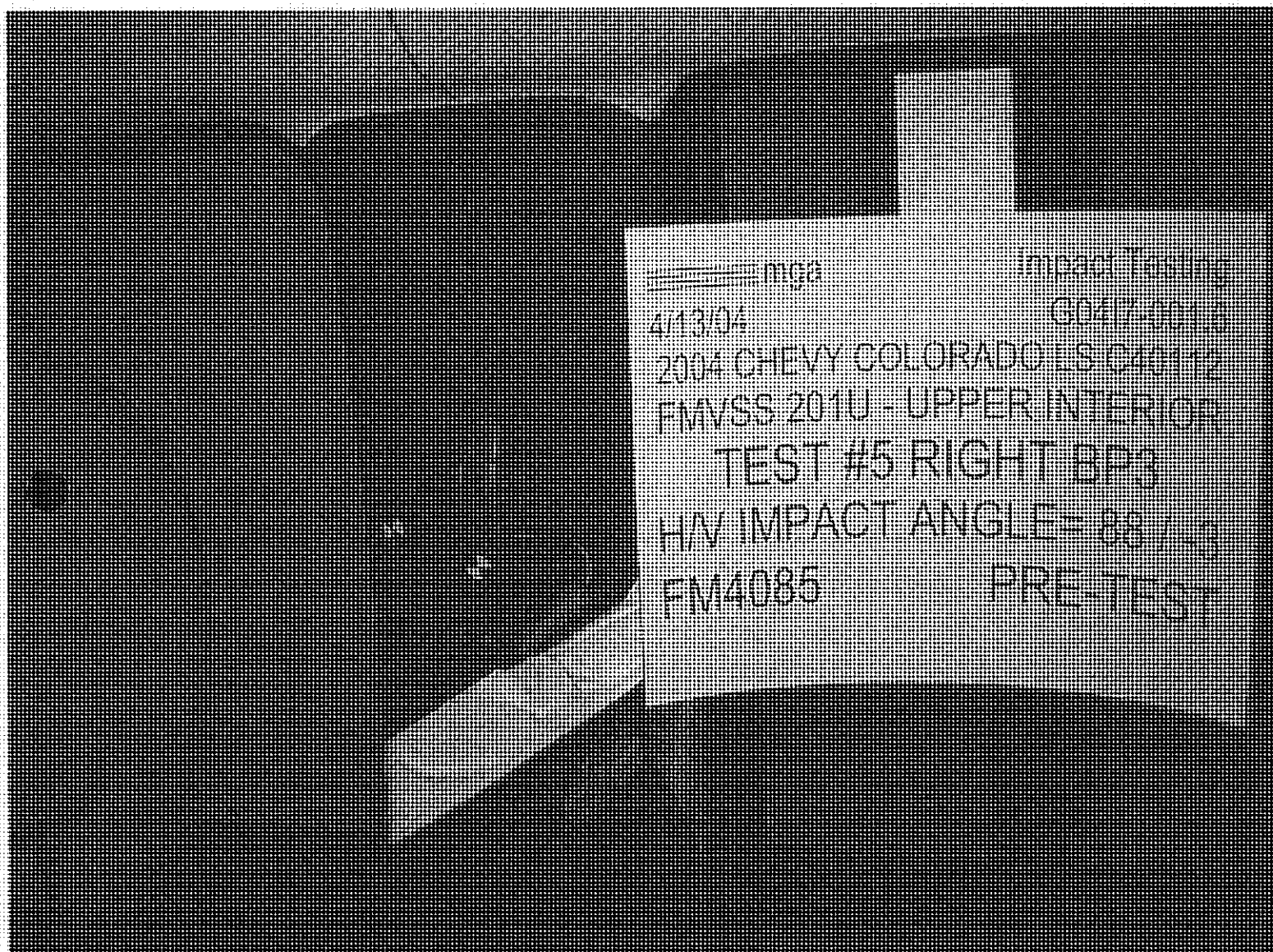
Customer: CHEVY
Test # 9
FM4089
Additional Desc: N/A

Vehicle Program : COLORADO LS

Model Year: 2004
Target: BP1
Vehicle Side: Left
Horz/Vert Angle: 270/28

HIC(d) = 620, HIC = 601, Delta T = 8.6 msec





mgc

Impact Testing

4/13/04

G0417-0016

2004 CHEVY COLORADO LS C40112

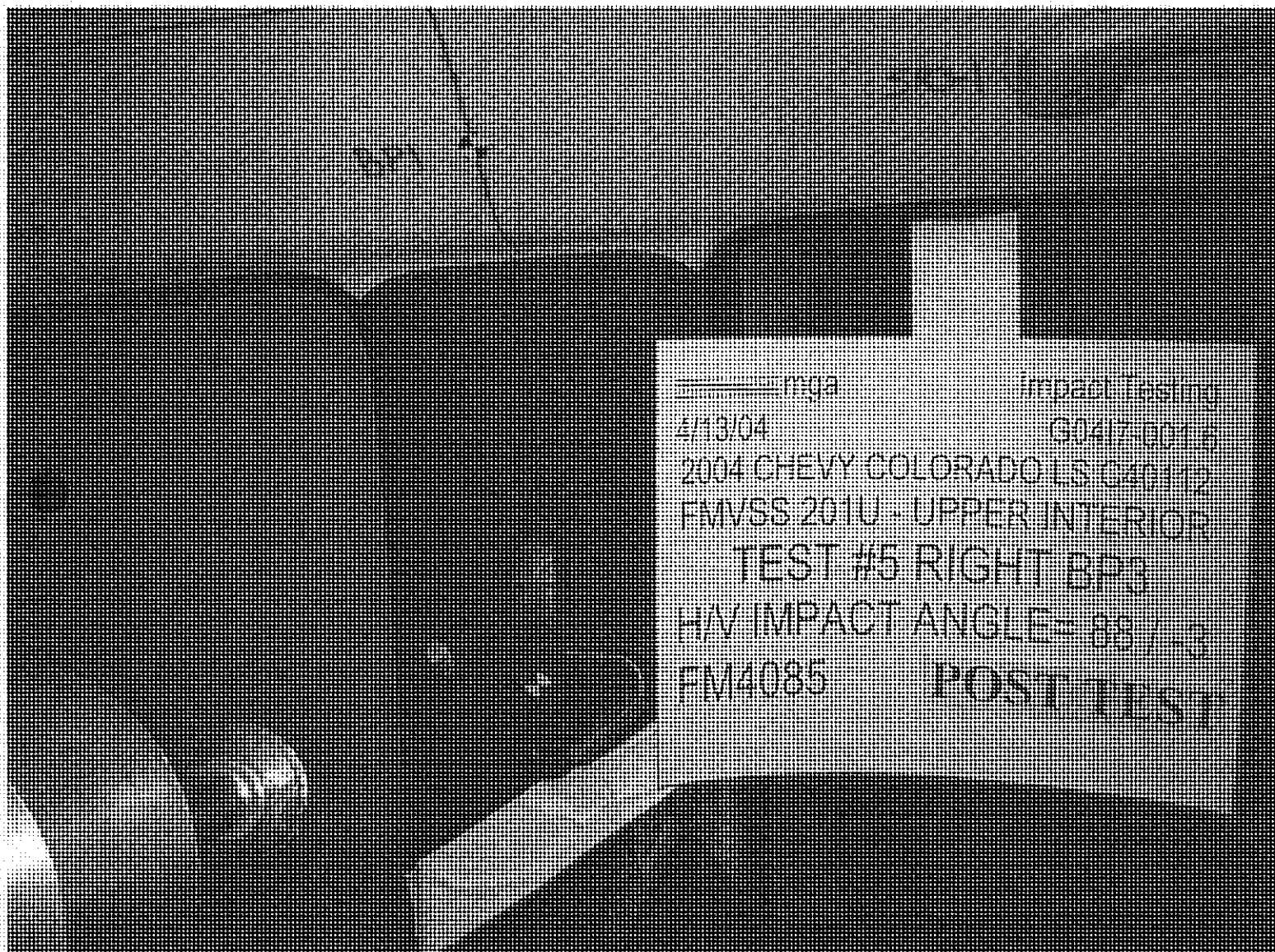
FMVSS 201U - UPPER INTERIOR

TEST #5 RIGHT BP3

H/V IMPACT ANGLE = 88 / 43

FM4085

PRE-TEST



Impact Testing
4/13/04 G0417-0016
2004 CHEVY COLORADO LS G40112
FMVSS 201U - UPPER INTERIOR
TEST #5 RIGHT BP3
H/V IMPACT ANGLE = 88 / 3
FM4085 POST TEST

===== miga

Impact Testing

4/13/04

00417-001.C

2004 CHEVY COLORADO LS C40112

FMVSS 201U - UPPER INTERIOR

TEST #5 RIGHT BP3

HV IMPACT ANGLE= 88 / -3

FM4085

POST TEST

MICHIGAN OPERATIONS
DATE: 3/20/03
SUPERCEDES: MGATP201U_FRAME #2.4

DOC. NO.: MGATP201U_FRAME #2
REVISION NO.: 5
PAGE 9 OF 9

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: C40112 VEHICLE YR/MAKE/MODEL: 2004 CHRYSLER PONTIAC ES

GENERAL TEST PARAMETERS:

Test Number: 5

Target (Vehicle Side): left/right RIGHT

Temperature: 24 °F

MGA Test Reference No.: FM4005

Humidity: 25 %

Approach Angles: Horizontal 88 °

Time of Test: 4:00 am/pm

Vertical -3 °

FMH Serial No: 36

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
635	621	7.7	23.8	12	18

INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J35923	99.2	1.20	1.20
Y	6	J35916	99.6	1.23	1.23
Z	7	J35918	99.1	1.51	1.51

REMARKS (Summary of test, damage, non-compliance, invalid test, etc.):

NO VISIBLE DAMAGE

Recorded By: [Signature] Approved By: Helen A. Koles Date: 4/13/04

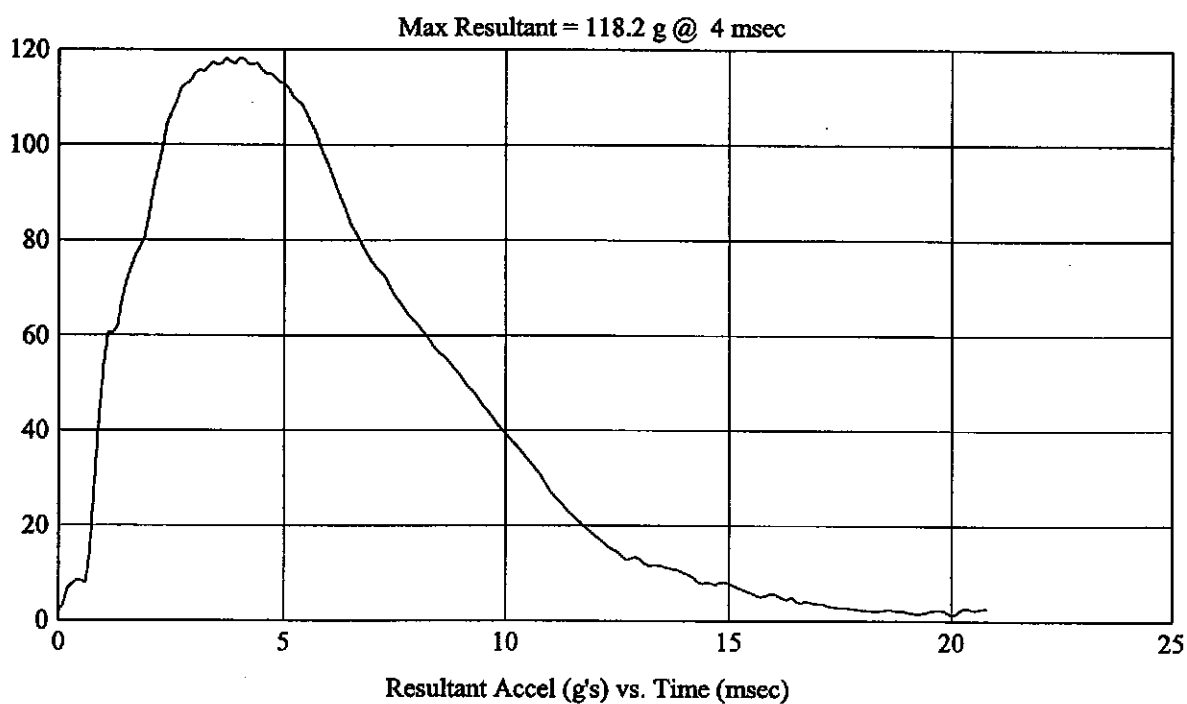
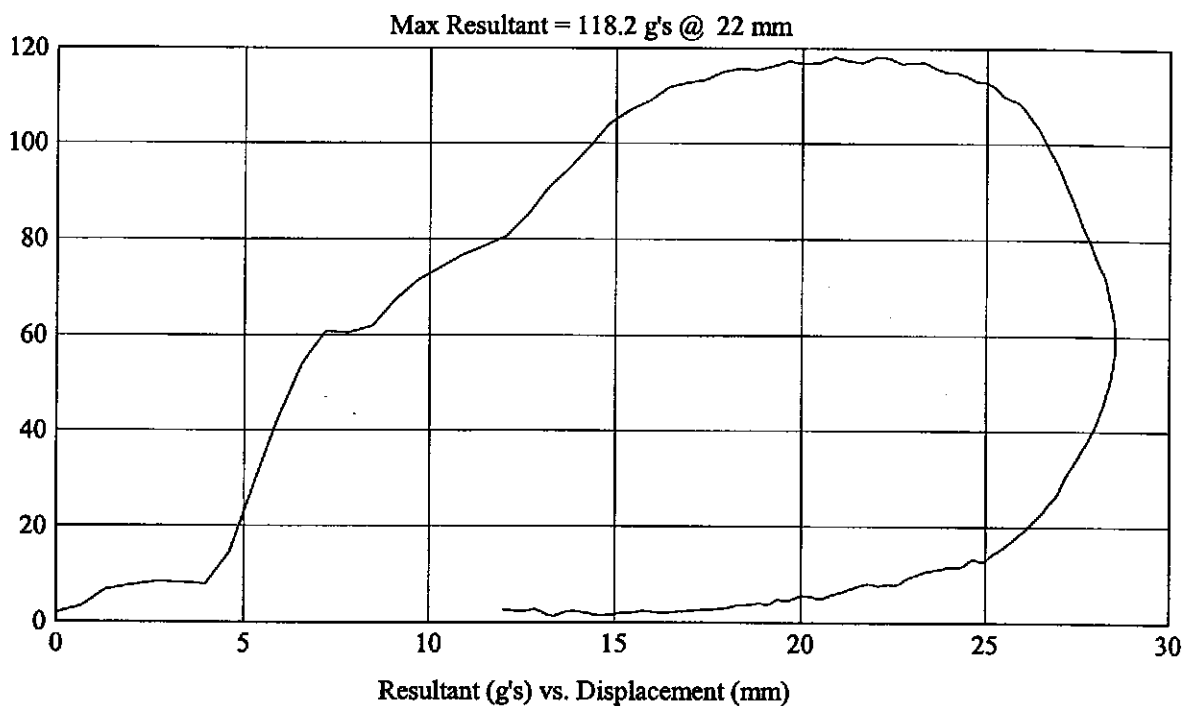
*Only necessary for NHTSA (Government) Compliance testing.

FMH
G04I7-001.6Customer: CHEVY
Test # 5
FM4085
Additional Desc: N/A

Vehicle Program : COLORADO LS

Model Year: 2004
Target: BP3
Vehicle Side: Right
Horz/Vert Angle: 88/-3

HIC(d) = 635, HIC = 621, Delta T = 7.7 msec

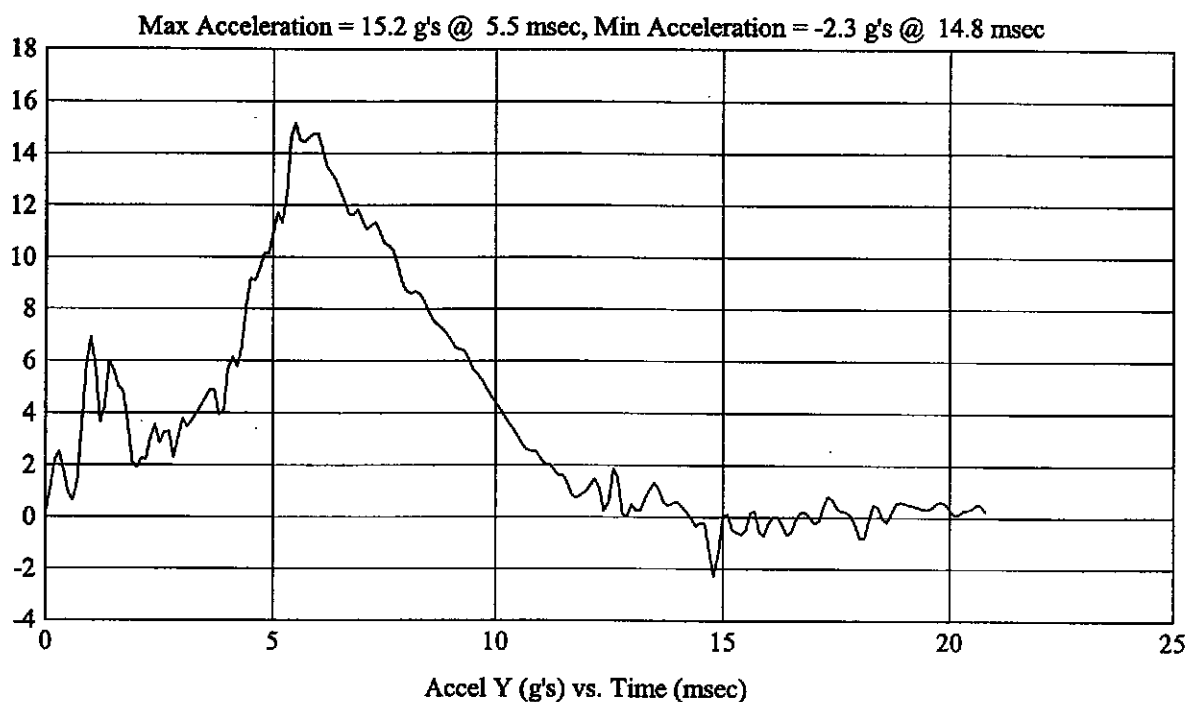
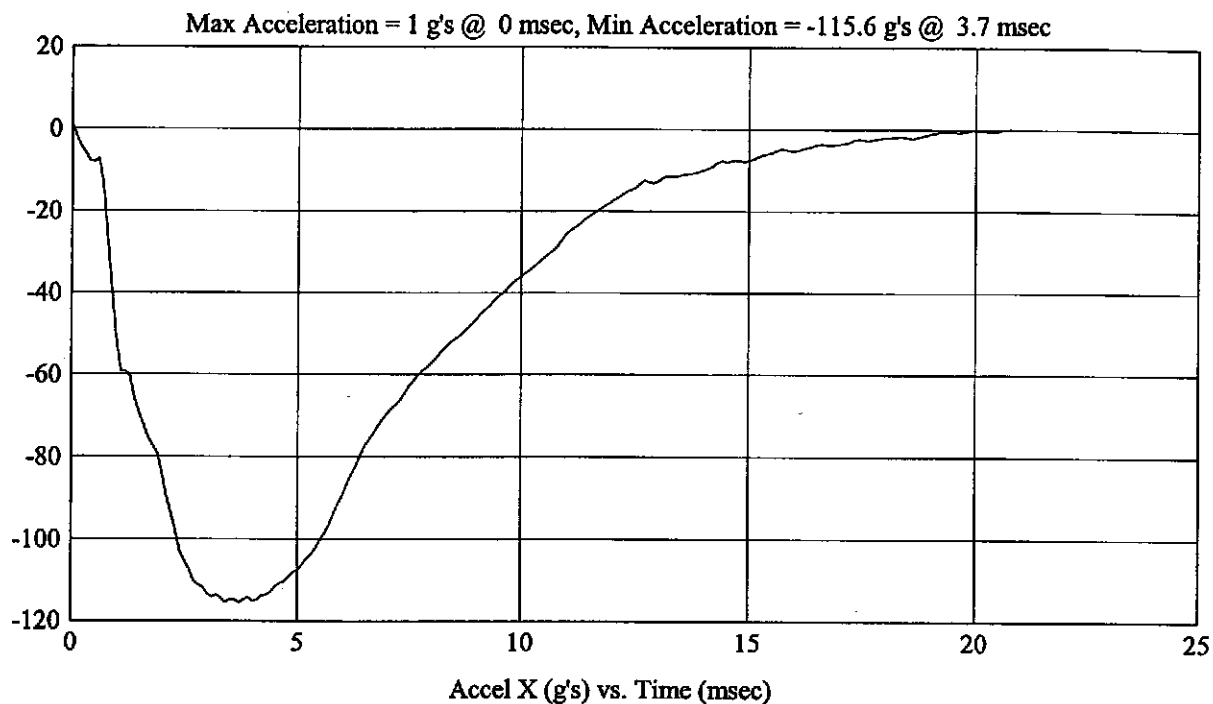


FMH
G04I7-001.6Customer: CHEVY
Test # 5
FM4085
Additional Desc: N/A

Vehicle Program : COLORADO LS

Model Year: 2004
Target: BP3
Vehicle Side: Right
Horz/Vert Angle: 88/-3

HIC(d) = 635, HIC = 621, Delta T = 7.7 msec



FMH
G04I7-001.6

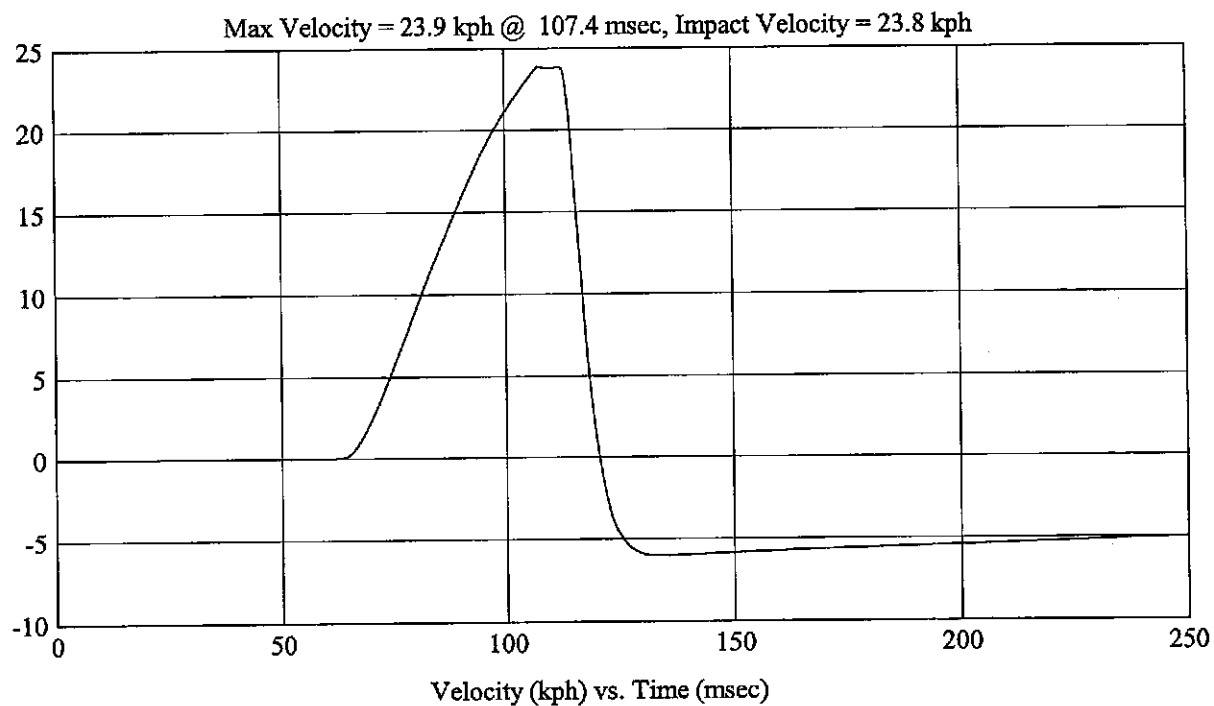
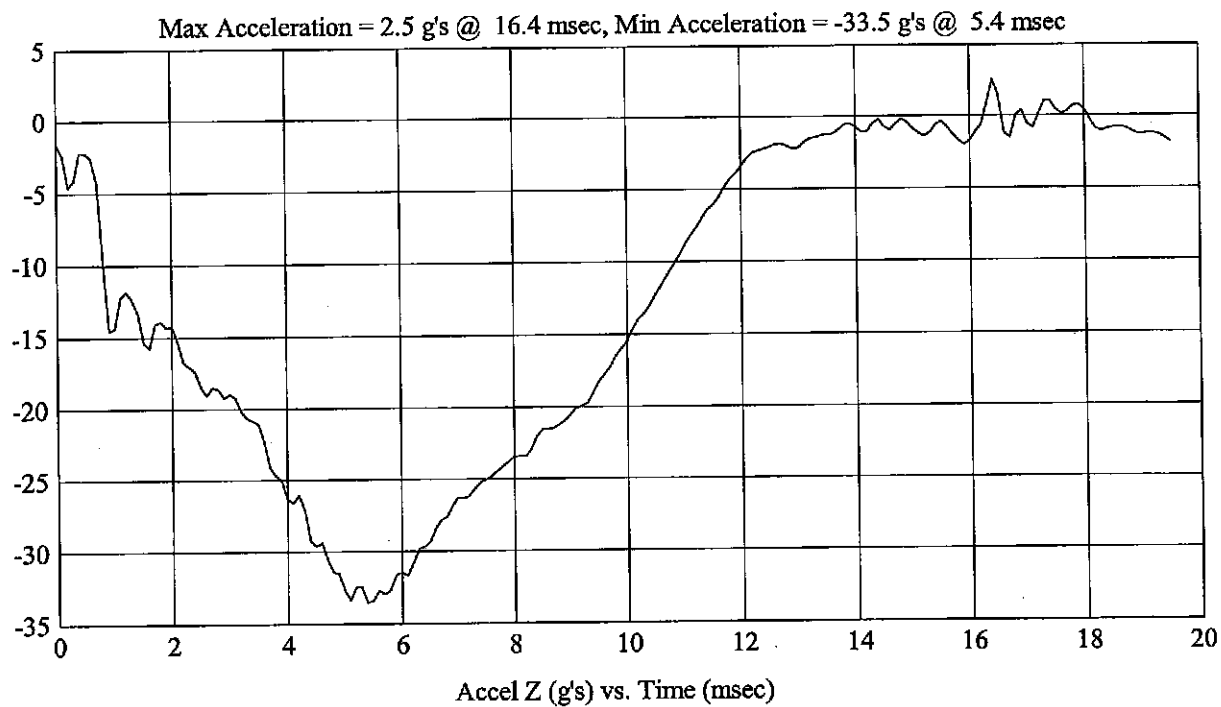
Customer: CHEVY
Test # 5
FM4085
Additional Desc: N/A

Vehicle Program : COLORADO LS

Test Date: 4/13/04

Model Year: 2004
Target: BP3
Vehicle Side: Right
Horz/Vert Angle: 88/-3

HIC(d) = 635, HIC = 621, Delta T = 7.7 msec



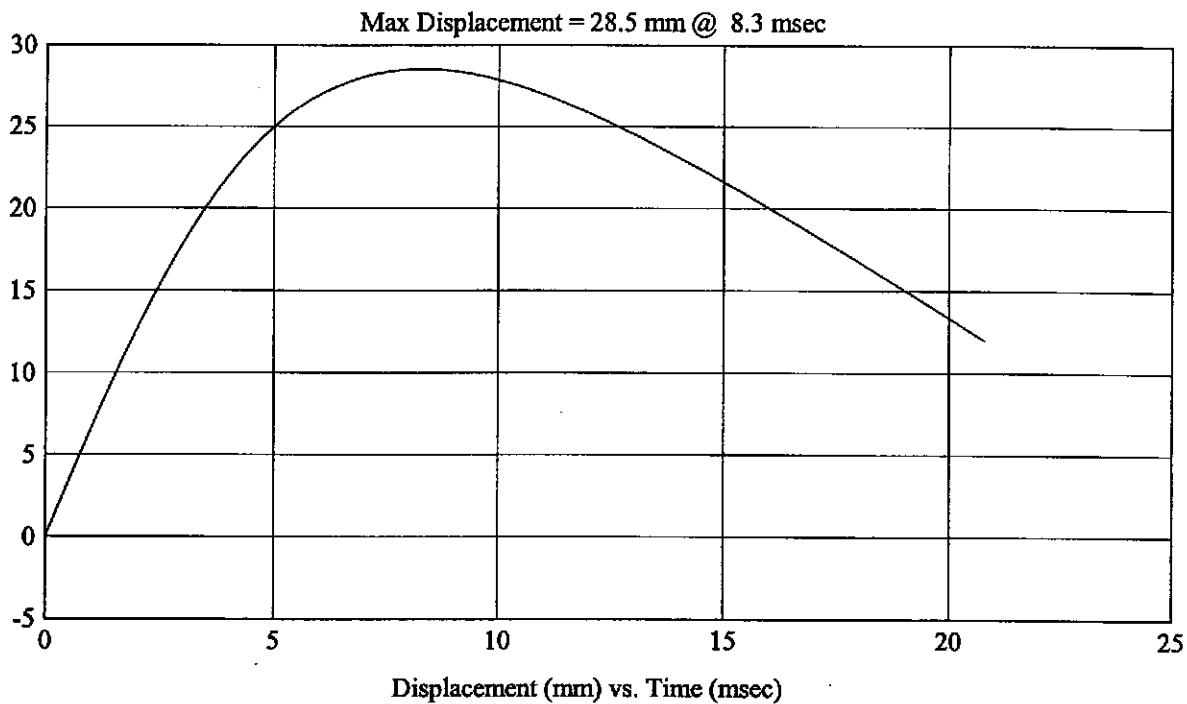
FMH
G04I7-001.6

Customer: CHEVY
Test # 5
FM4085
Additional Desc: N/A

Vehicle Program : COLORADO LS

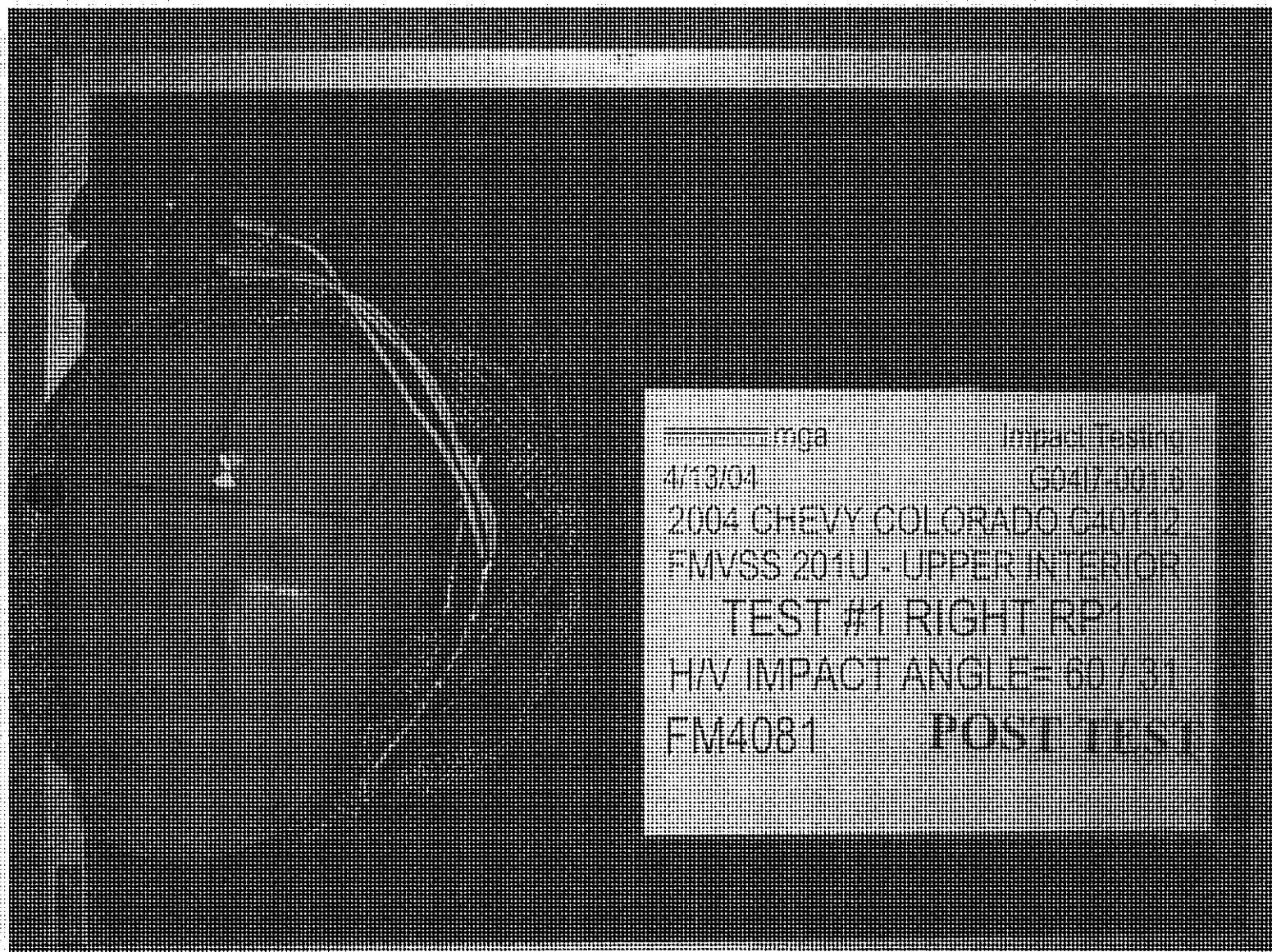
Model Year: 2004
Target: BP3
Vehicle Side: Right
Horz/Vert Angle: 88/-3

HIC(d) = 635, HIC = 621, Delta T = 7.7 msec



INTERPOL TOGENU
6047-0116
2004 CHEVY COLORADO C40012
FMVSS 2010 - UPPER INTERIOR
TEST #1 RIGHT RP1
HV IMPACT ANGLE=60/31
FMA081 PRE-TEST

Impact Testing
G0417-0015
2014 CHEVY COLORADO C40112
FMVSS 2013 - UPPER INTERIOR
TEST #1 RIGHT RP1
H/V IMPACT ANGLE= 60 / 31
FM4081 POST TEST



4/13/01

INTELL TEST

4/13/01

624/001

2004 CHEVY COLORADO C40712

FMVSS 201U - UPPER INTERIOR

TEST #1 RIGHT RP1

HIV IMPACT ANGLE= 60/31

FM4081

POST TEST

MICHIGAN OPERATIONS
DATE: 3/20/03
SUPERCEDES: MGATP201U_FRAME #2.4

DOC. NO.: MGATP201U_FRAME #2
REVISION NO.: 5
PAGE 9 OF 9

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: CY0112 VEHICLE YR/MAKE/MODEL: 2004 CHRY COLORED LS

GENERAL TEST PARAMETERS:

Test Number: 1

Target (Vehicle Side): left/right RPI

Temperature: 24 °F/°C

MGA Test Reference No.: FM4081

Humidity: 23 %

Approach Angles: Horizontal 60 °

Time of Test: 12:00 am/pm

Vertical 31 °

FMH Serial No: 36

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
<u>636</u>	<u>625</u>	<u>8.6</u>	<u>23.8</u>	<u>10</u>	<u>5</u>

INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
<u>X</u>	<u>5</u>	<u>J35923</u>	<u>-99.2</u>	<u>1.20</u>	<u>1.20</u>
<u>Y</u>	<u>6</u>	<u>J35916</u>	<u>99.6</u>	<u>1.23</u>	<u>1.23</u>
<u>Z</u>	<u>7</u>	<u>J35918</u>	<u>99.1</u>	<u>1.51</u>	<u>1.51</u>

REMARKS (Summary of test, damage, non-compliance, invalid test, etc.):

NO VISIBLE DAMAGE TO FMH
SLIGHT HEADLAMP DEFORMATION

Recorded By: [Signature] Approved By: [Signature] Date: 4/13/04

*Only necessary for NHTSA (Government) Compliance testing.

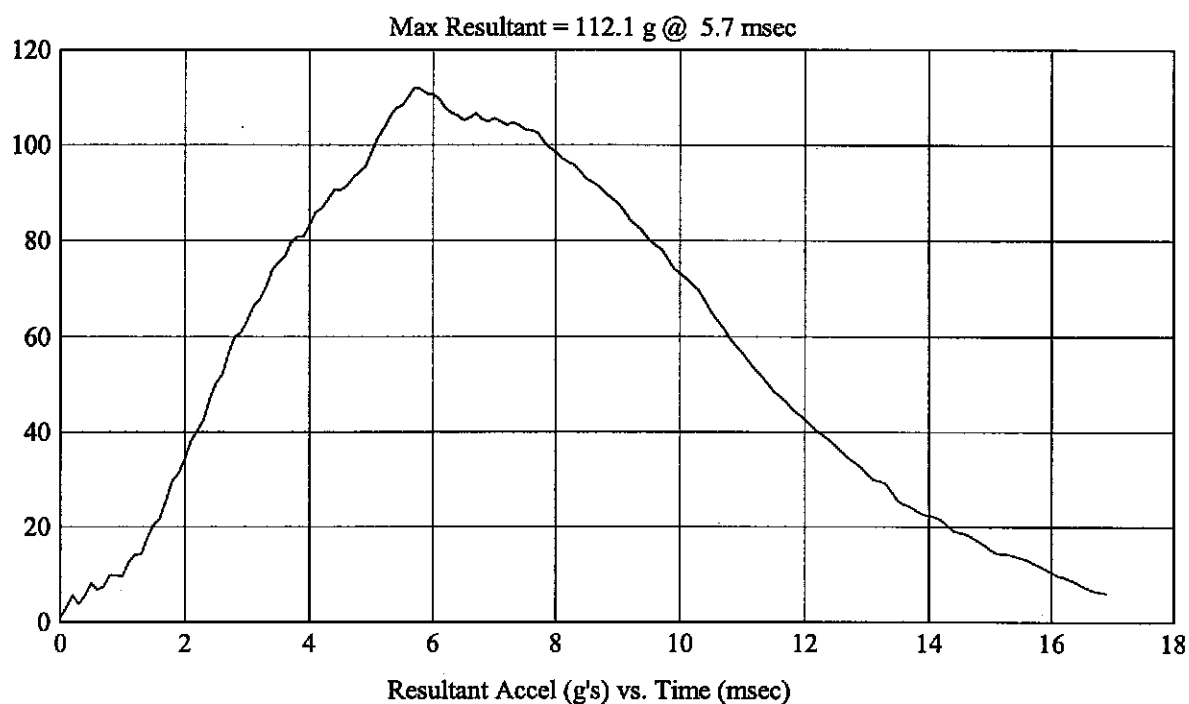
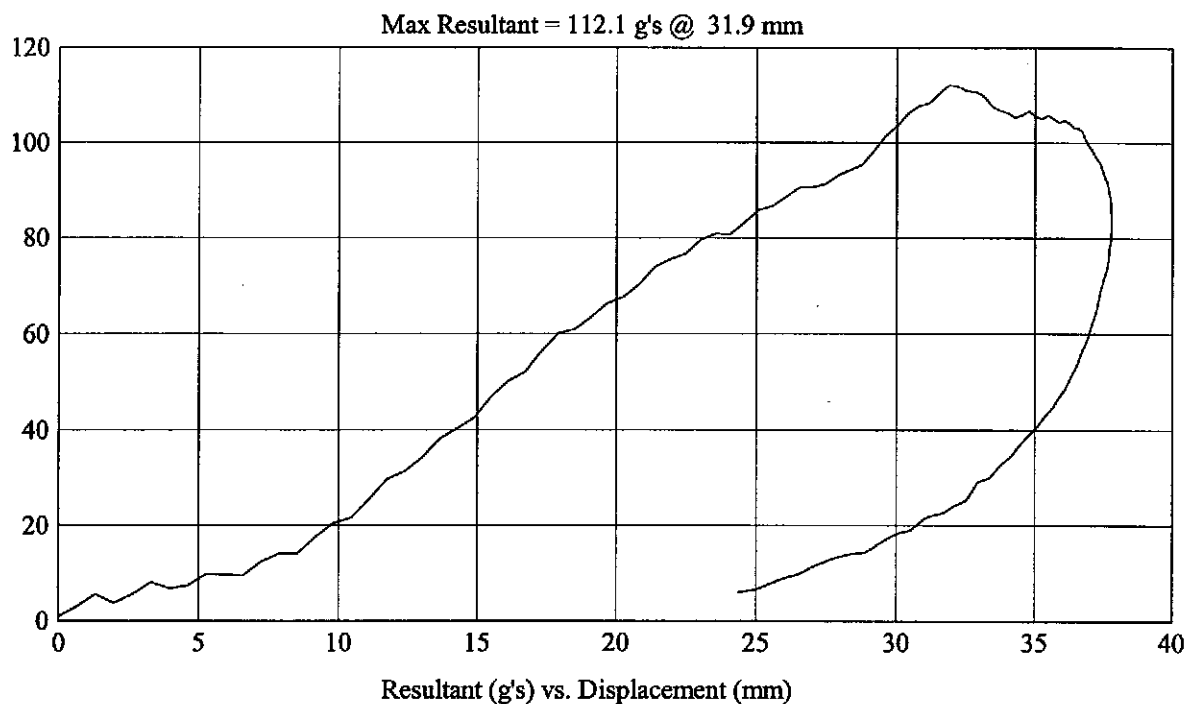
FMH
G04I7-001.6

Customer: CHEVY
Test # 1
FM4081
Additional Desc: N/A

Vehicle Program : COLORADO

Model Year: 2004
Target: RP1
Vehicle Side: Right
Horz/Vert Angle: 60/31

HIC(d) = 636, HIC = 623, Delta T = 8.6 msec

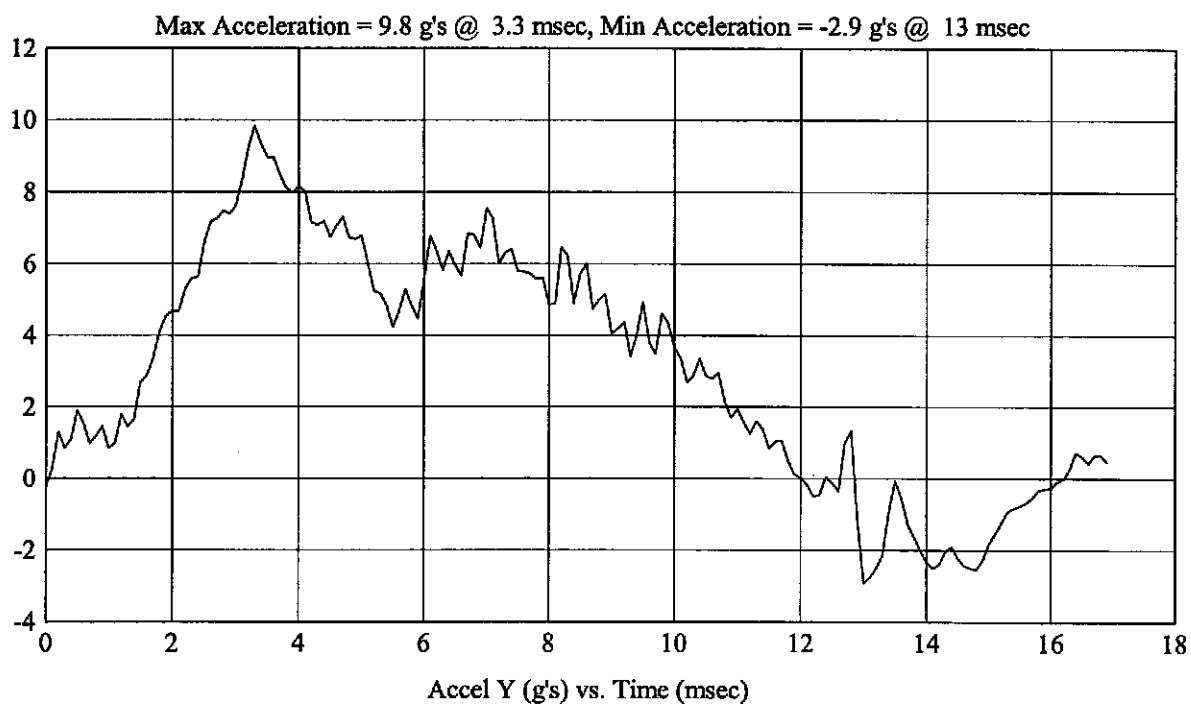
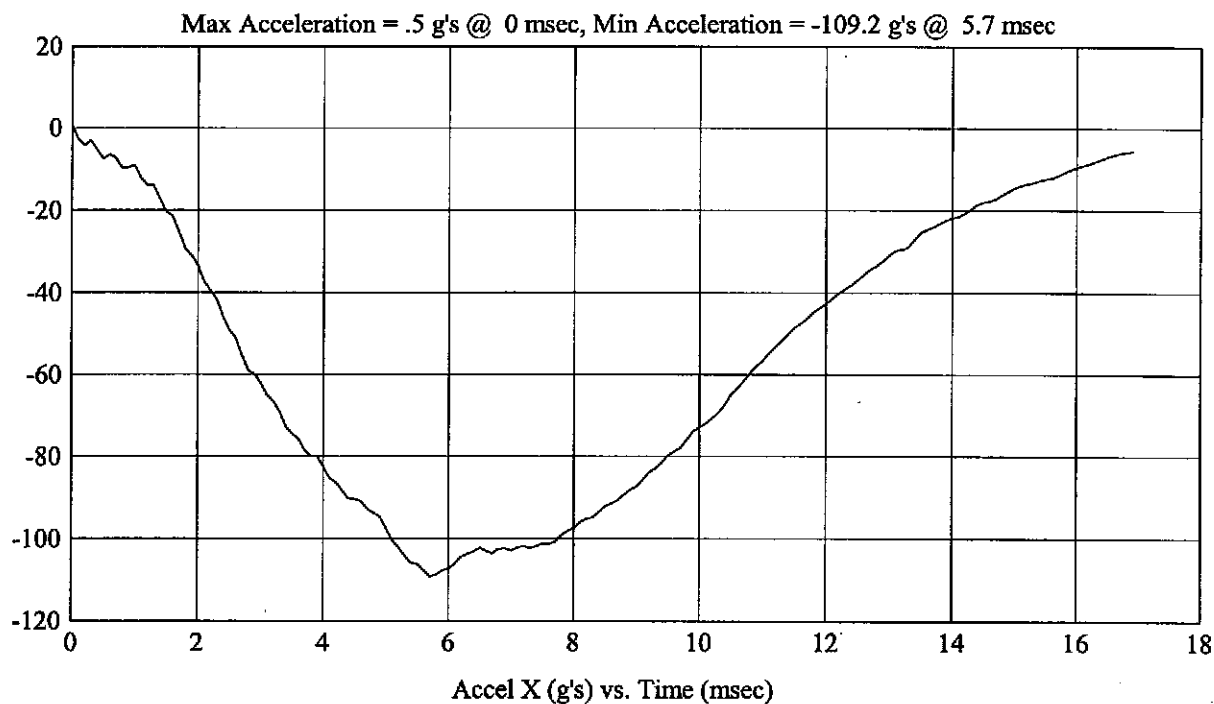


FMH
G04I7-001.6Customer: CHEVY
Test # 1
FM4081
Additional Desc: N/A

Vehicle Program : COLORADO

Model Year: 2004
Target: RP1
Vehicle Side: Right
Horz/Vert Angle: 60/31

HIC(d) = 636, HIC = 623, Delta T = 8.6 msec



FMH
G04I7-001.6

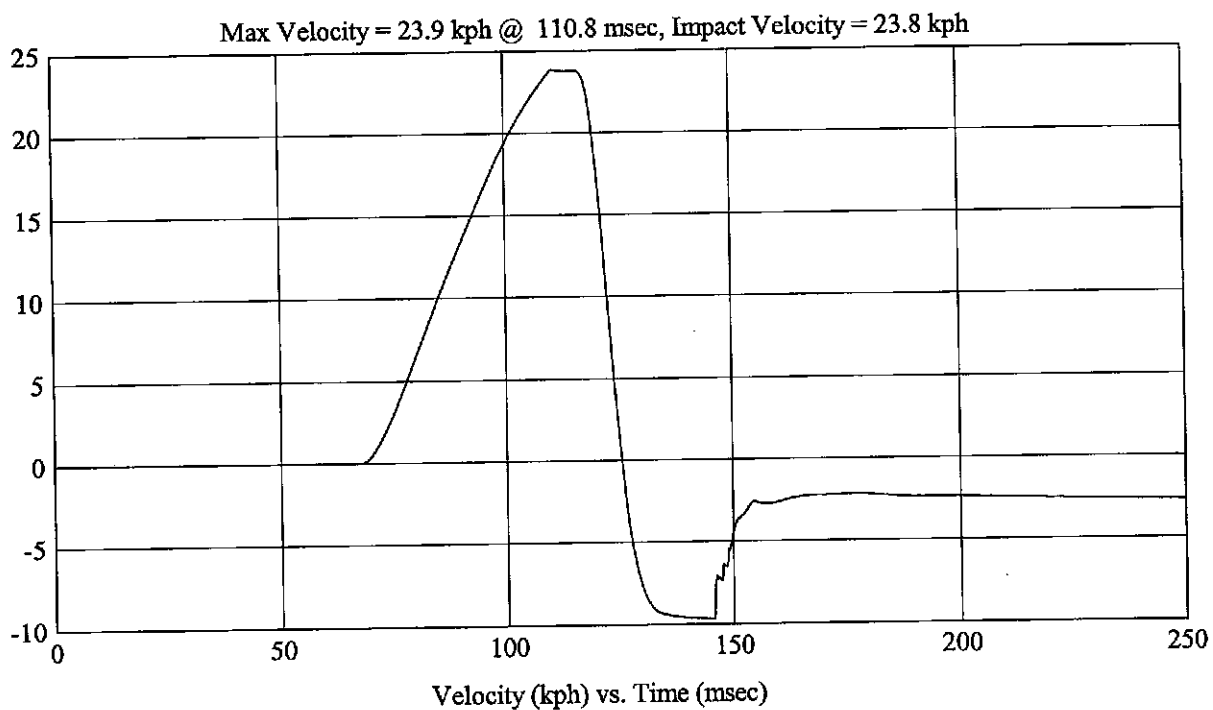
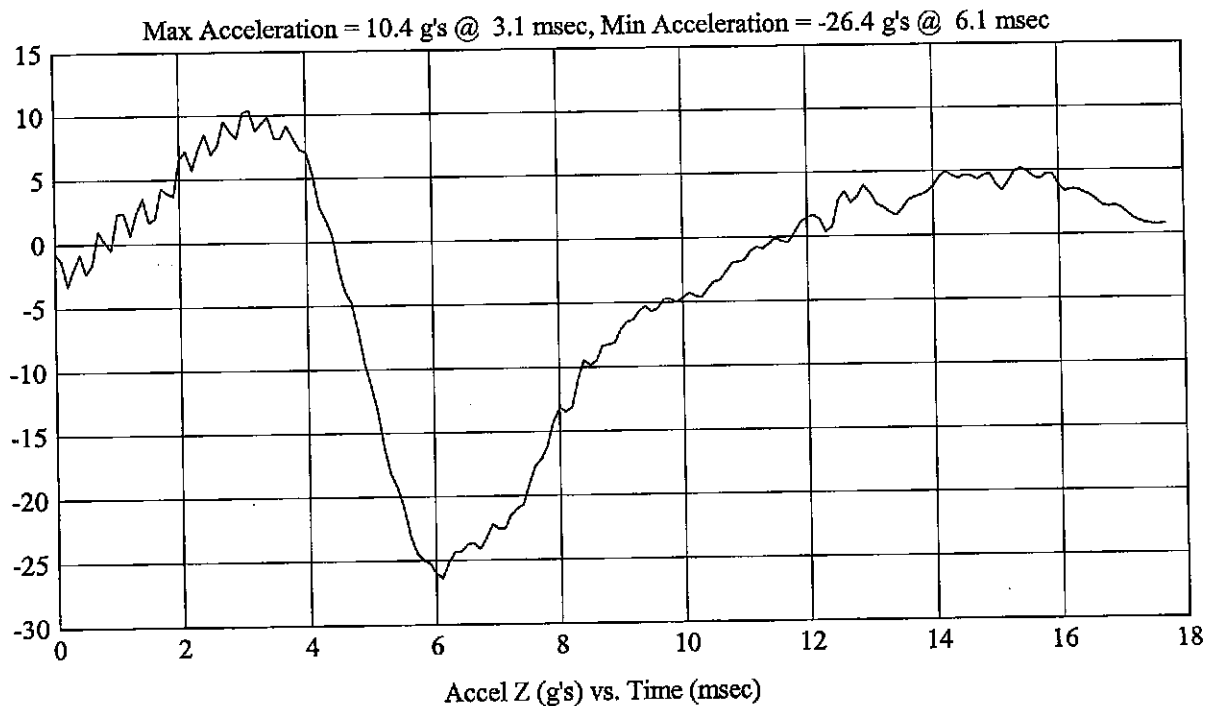
Customer: CHEVY
Test # 1
FM4081
Additional Desc: N/A

Vehicle Program : COLORADO

Test Date: 4/13/04

Model Year: 2004
Target: RP1
Vehicle Side: Right
Horz/Vert Angle: 60/31

HIC(d) = 636, HIC = 623, Delta T = 8.6 msec



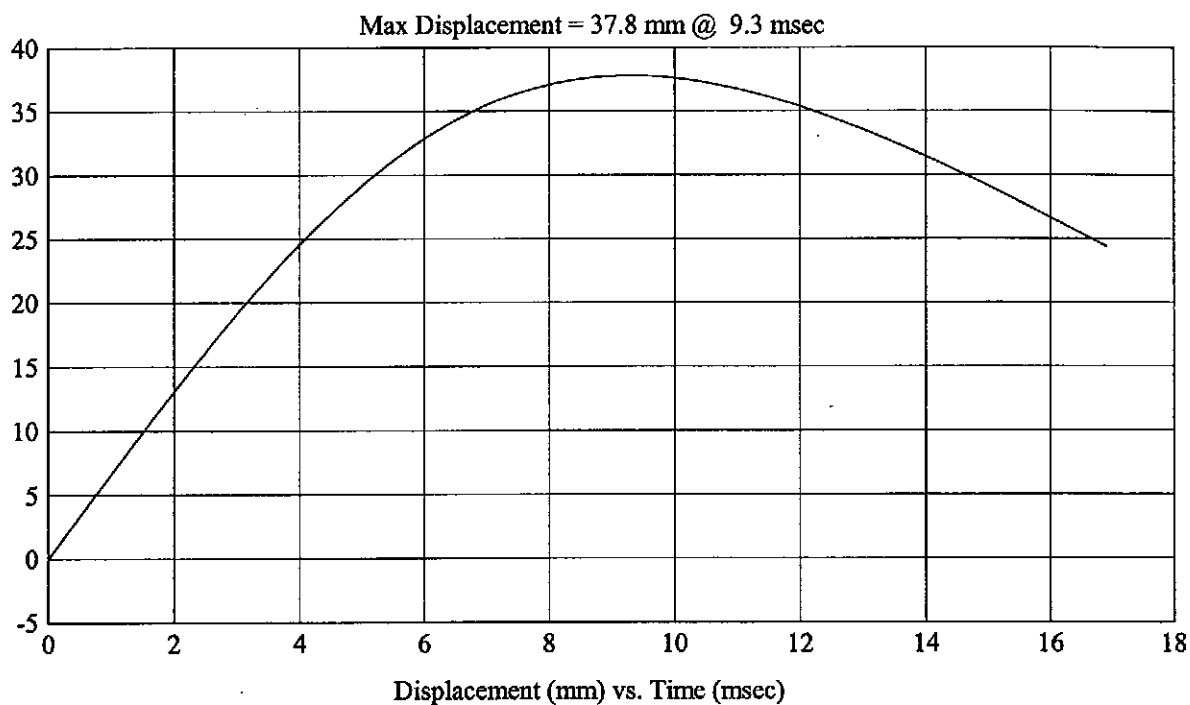
FMH
G04I7-001.6

Customer: CHEVY
Test # 1
FM4081
Additional Desc: N/A

Vehicle Program : COLORADO

Model Year: 2004
Target: RP1
Vehicle Side: Right
Horz/Vert Angle: 60/31

HIC(d) = 636, HIC = 623, Delta T = 8.6 msec



Impact Testing
4/14/04 GC417-0016
2004 CHEVY COLORADO LS C40112
FMVSS 201U - UPPER INTERIOR
TEST #10 LEFT RH
HW IMPACT ANGLE= 0 / 22
FM4090 PRE-TEST

Impact Testing
4/14/04 G047-0016
2004 CHEVY COLORADO LS C40112
FMVSS 201U - UPPER INTERIOR
TEST #10 LEFT RH
H/V IMPACT ANGLE= 0 / 22
FM4090 POST TEST

FCE

Impact Testing

C4405

C047-01/3

2004 CHEVY COLORADO LS C40112

FMVSS 201U - UPPER INTERIOR

TEST #10 LEFT RH

HV IMPACT ANGLE= 0 / 22

FMVSS

POST TEST

MICHIGAN OPERATIONS
DATE: 3/20/03
SUPERCEDES: MGATP201U_FRAME #2.4

DOC. NO.: MGATP201U_FRAME #2
REVISION NO.: 5
PAGE 9 OF 9

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: C40112 VEHICLE YR/MAKE/MODEL: 2004 Chevy Colorado LS

GENERAL TEST PARAMETERS:

Target (Vehicle Side): (Left) Right 214

MGA Test Reference No.: FM4090

Approach Angles: Horizontal 0 °

Vertical 22 °

Test Number: 10

Temperature: 27 °F (C)

Humidity: 20 %

Time of Test: 2:00 am/pm (pm)

FMH Serial No: 37

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	<u>(Left/Right)</u> Pt. O
<u>678</u>	<u>678</u>	<u>9.6</u>	<u>24.0</u>	<u>20</u>	<u>12</u>

INSTRUMENTAION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
<u>X</u>	<u>5</u>	<u>J35800</u>	<u>95.9</u>	<u>1.20</u>	<u>1.20</u>
<u>Y</u>	<u>6</u>	<u>J35841</u>	<u>92.0</u>	<u>1.23</u>	<u>1.23</u>
<u>Z</u>	<u>7</u>	<u>J35791</u>	<u>89.3</u>	<u>1.51</u>	<u>1.51</u>

REMARKS (Summary of test, damage, non-compliance, invalid test, etc.):

NO VISIBLE DAMAGE

Recorded By: [Signature] Approved By: [Signature] Date: 4/14/04

*Only necessary for NHTSA (Government) Compliance testing.

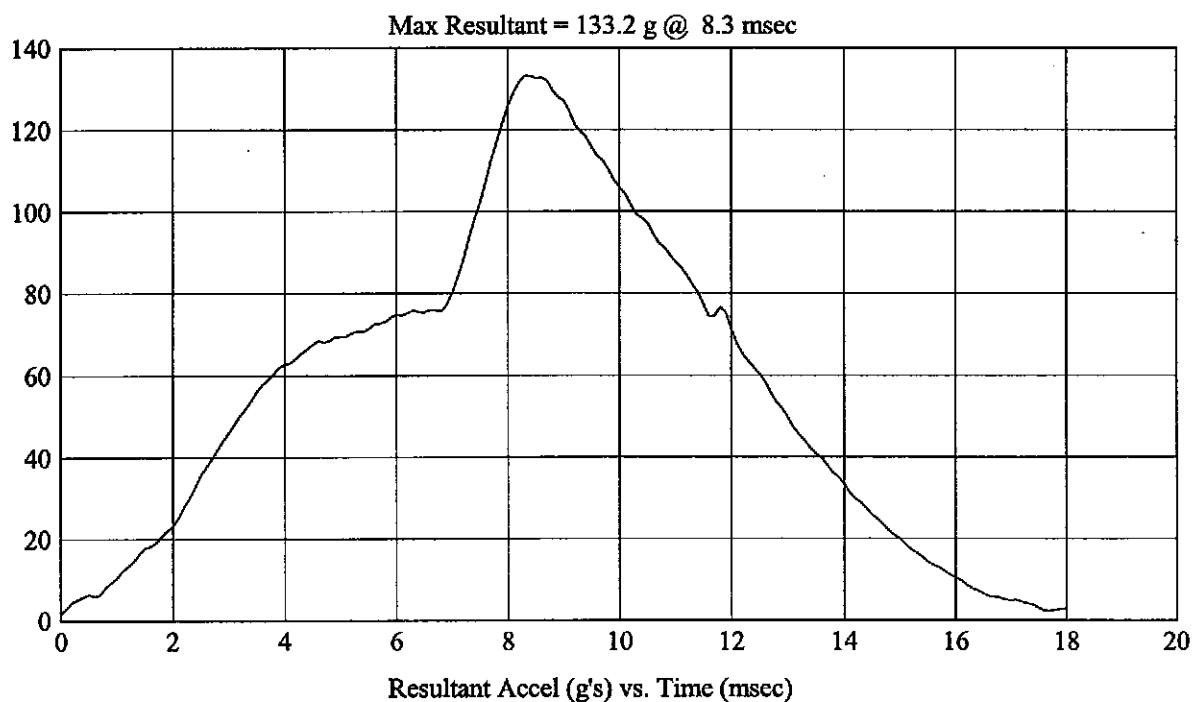
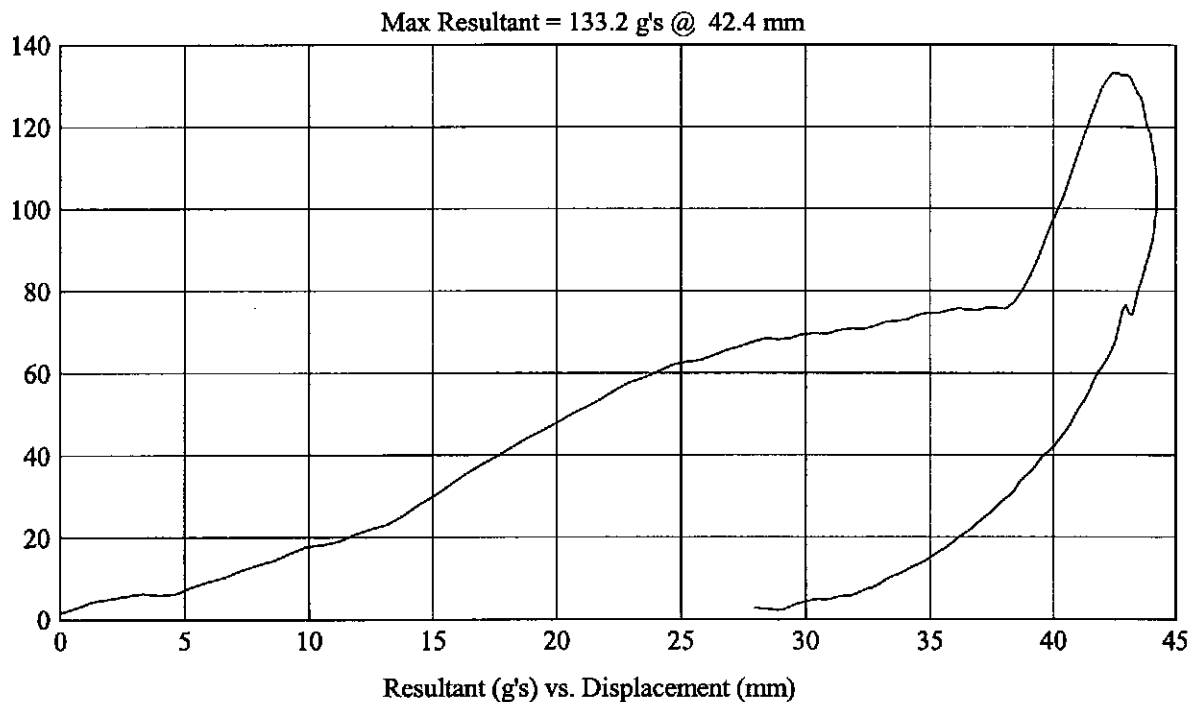
FMH
G04I7-001.6

Customer: CHEVY
Test # 10
FM4090
Additional Desc: N/A

Vehicle Program : COLORADO LS

Model Year: 2004
Target: RH
Vehicle Side: Left
Horz/Vert Angle: 0/22

HIC(d) = 678, HIC = 678, Delta T = 9.6 msec

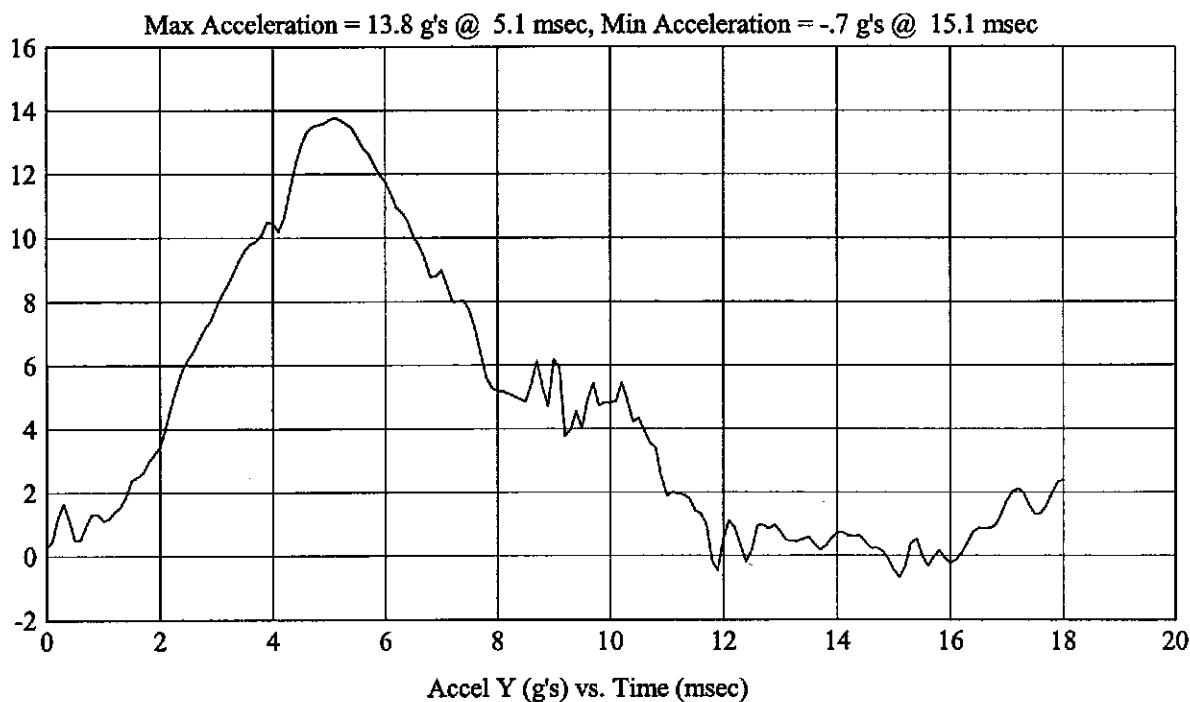
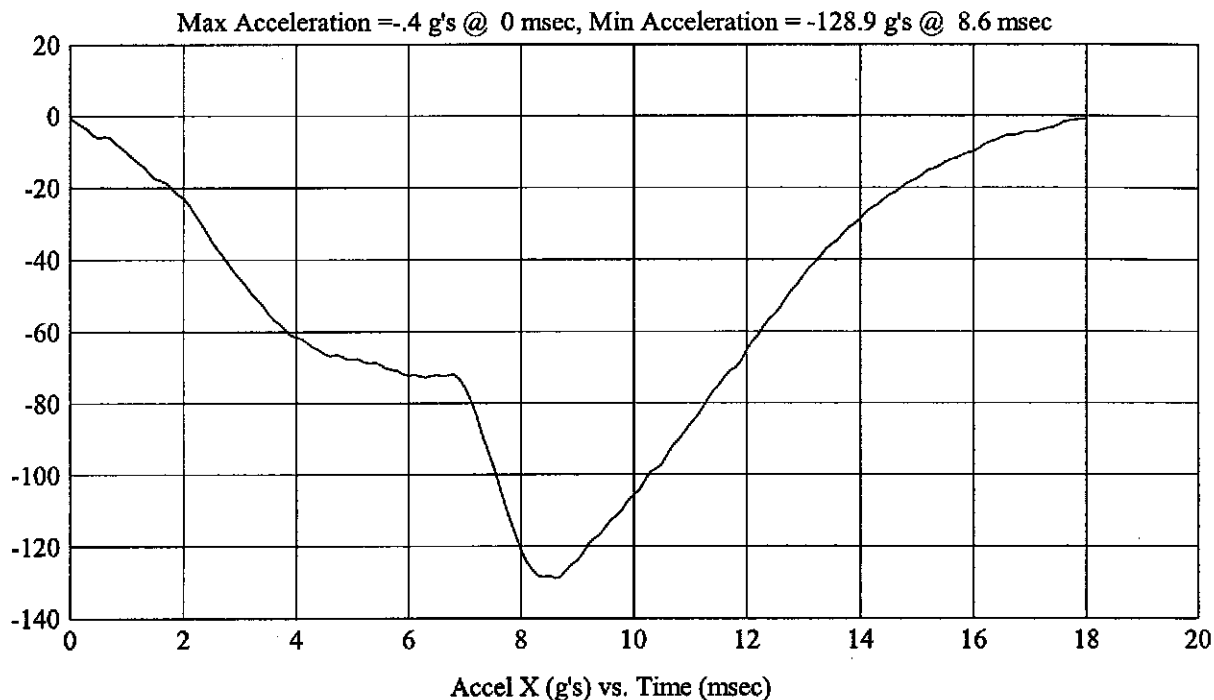


FMH
G04I7-001.6Customer: CHEVY
Test # 10
FM4090
Additional Desc: N/A

Vehicle Program : COLORADO LS

Model Year: 2004
Target: RH
Vehicle Side: Left
Horz/Vert Angle: 0/22

HIC(d) = 678, HIC = 678, Delta T = 9.6 msec



FMH
G04I7-001.6

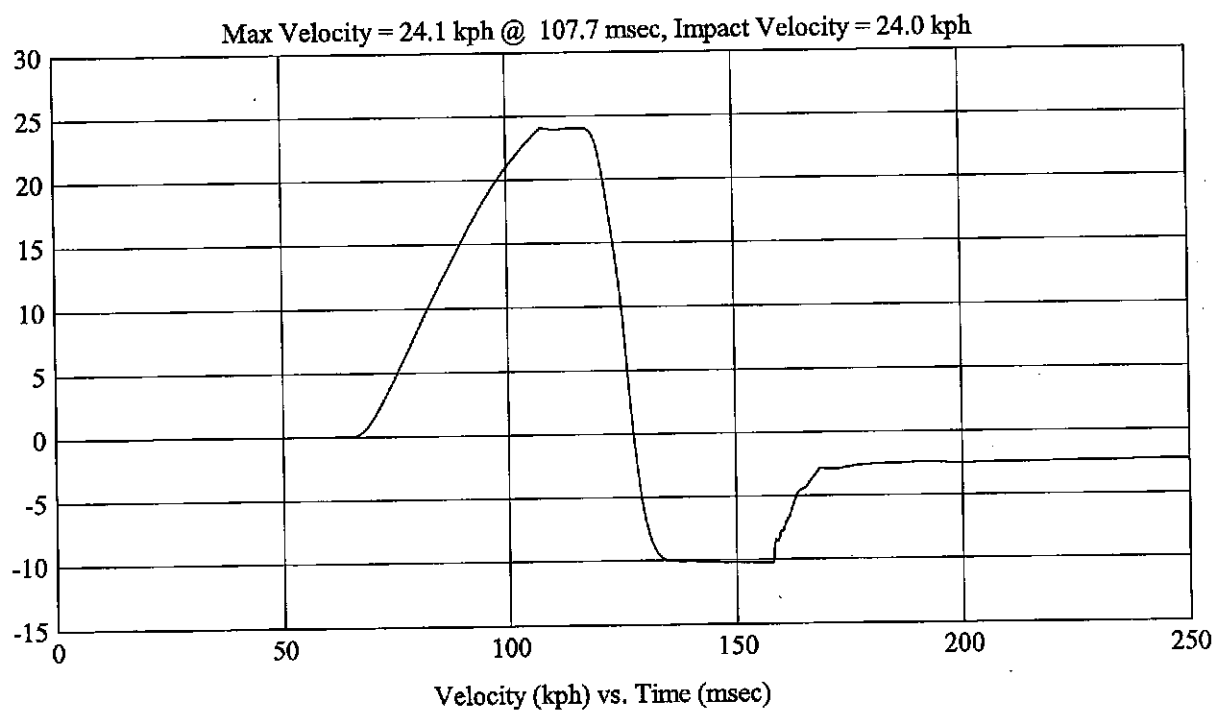
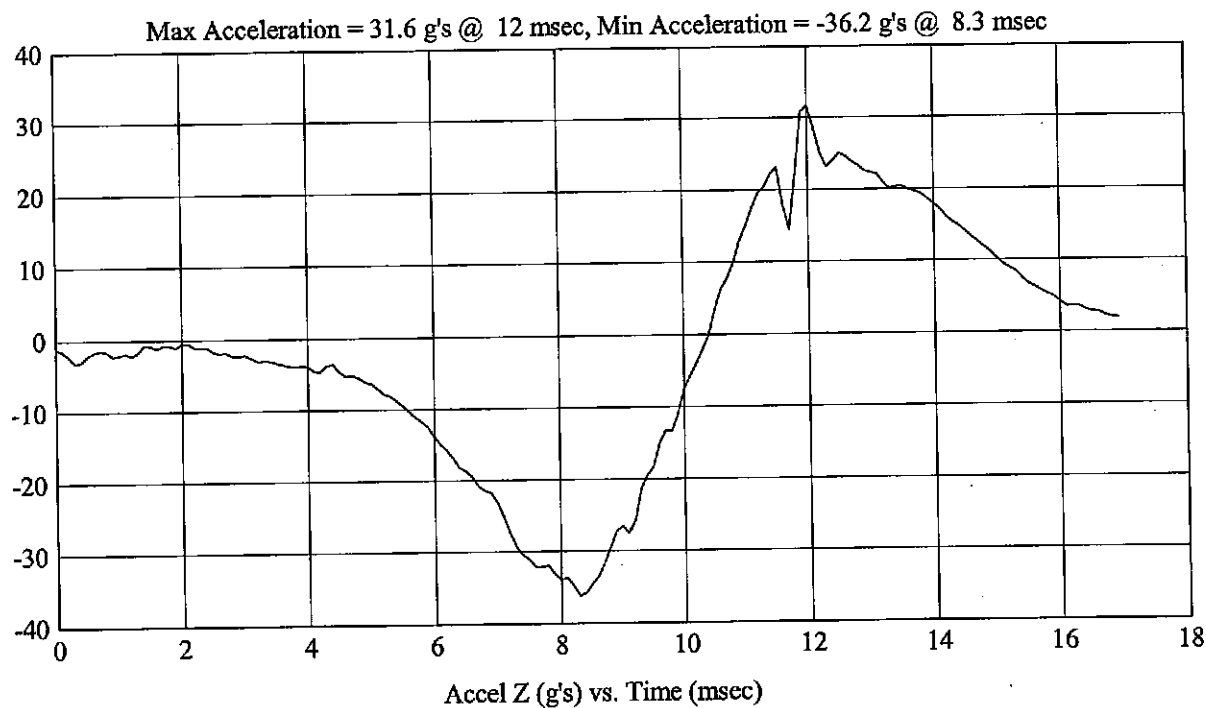
Customer: CHEVY
Test # 10
FM4090
Additional Desc: N/A

Vehicle Program : COLORADO LS

Test Date: 4/14/04

Model Year: 2004
Target: RH
Vehicle Side: Left
Horz/Vert Angle: 0/22

HIC(d) = 678, HIC = 677, Delta T = 9.6 msec



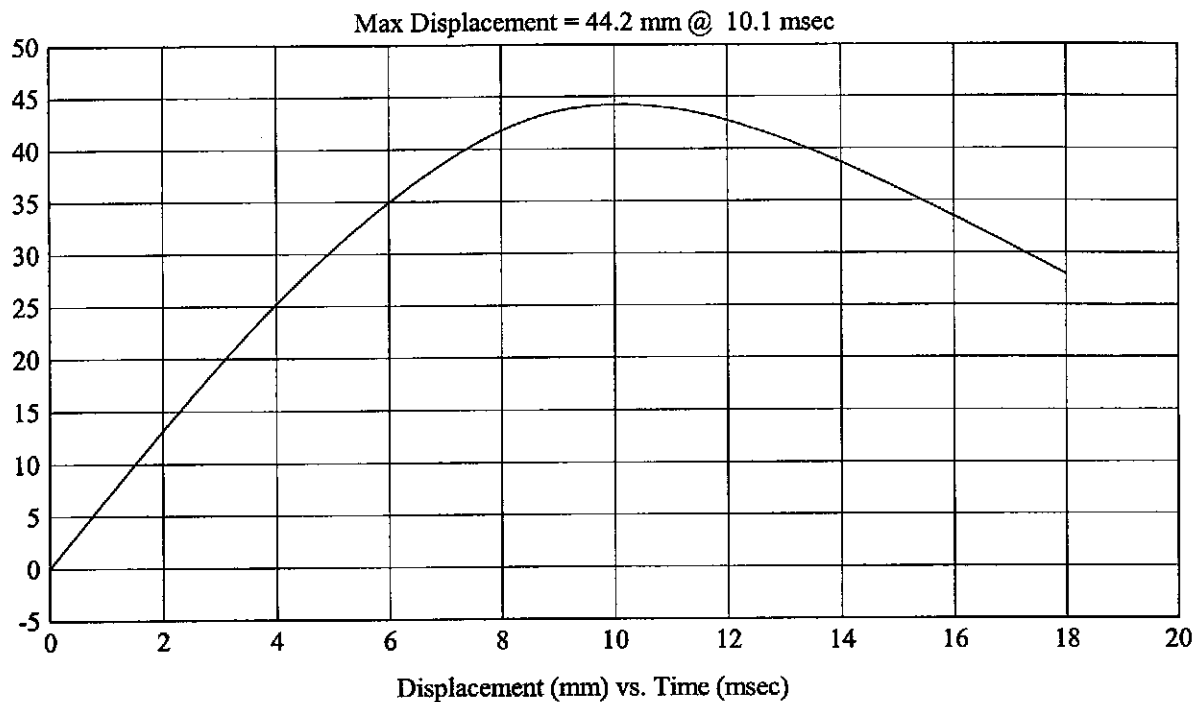
FMH
G04I7-001.6

Customer: CHEVY
Test # 10
FM4090
Additional Desc: N/A

Vehicle Program : COLORADO LS

Model Year: 2004
Target: RH
Vehicle Side: Left
Horz/Vert Angle: 0/22

HIC(d) = 678, HIC = 678, Delta T = 9.6 msec



=====mgz Impact Testing
4/14/04 G0417-001.6
2004 CHEVY COLORADO LS C40112
FMVSS 201U - UPPER INTERIOR
TEST #8 LEFT SR2(B)
H/V IMPACT ANGLE = 270 / 50
FM4088 PRE - TEST

Impact Testing
4/14/04 C0417-001.6
2004 CHEVY COLORADO LS C40112
FMVSS 201U - UPPER INTERIOR
TEST #8 LEFT SR2(B)
HV IMPACT ANGLE= 270 / 50
FM4088 POST TEST

INCE INCE Testing
NADA 60473015
2007 CHEVY COLORADO LS 640112
EMISS 2010 - UPPER INTERIOR
TEST 48 LEFT SR2(B)
HV IMPACT ANGLE- 270 / 50
FM088 POST TEST

MICHIGAN OPERATIONS
DATE: 3/20/03
SUPERCEDES: MGATP201U_FRAME #2.4

DOC. NO.: MGATP201U_FRAME #2
REVISION NO.: 5
PAGE 9 OF 9

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: C40112 VEHICLE YR/MAKE/MODEL: 2004 Chevy Colorado LS

GENERAL TEST PARAMETERS:

Test Number: 8

Target (Vehicle Side): Left/Right SR2B

Temperature: 24 °F/C

MGA Test Reference No.: FM4088

Humidity: 20 %

Approach Angles: Horizontal 270 °

Time of Test: 11:55 am/pm

Vertical 50 °

FMH Serial No: 36

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
946	1033	5.3	23.4	4	6

INSTRUMENTAION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J35523	-99.2	1.20	1.20
Y	6	J35516	99.6	1.23	1.23
Z	7	J35518	99.1	1.51	1.51

REMARKS (Summary of test, damage, non-compliance, invalid test, etc.): _____

SLIGHT HEADLINE DEFORMATION

Recorded By: [Signature] Approved By: Helen G. Kaloto Date: 4/14/04

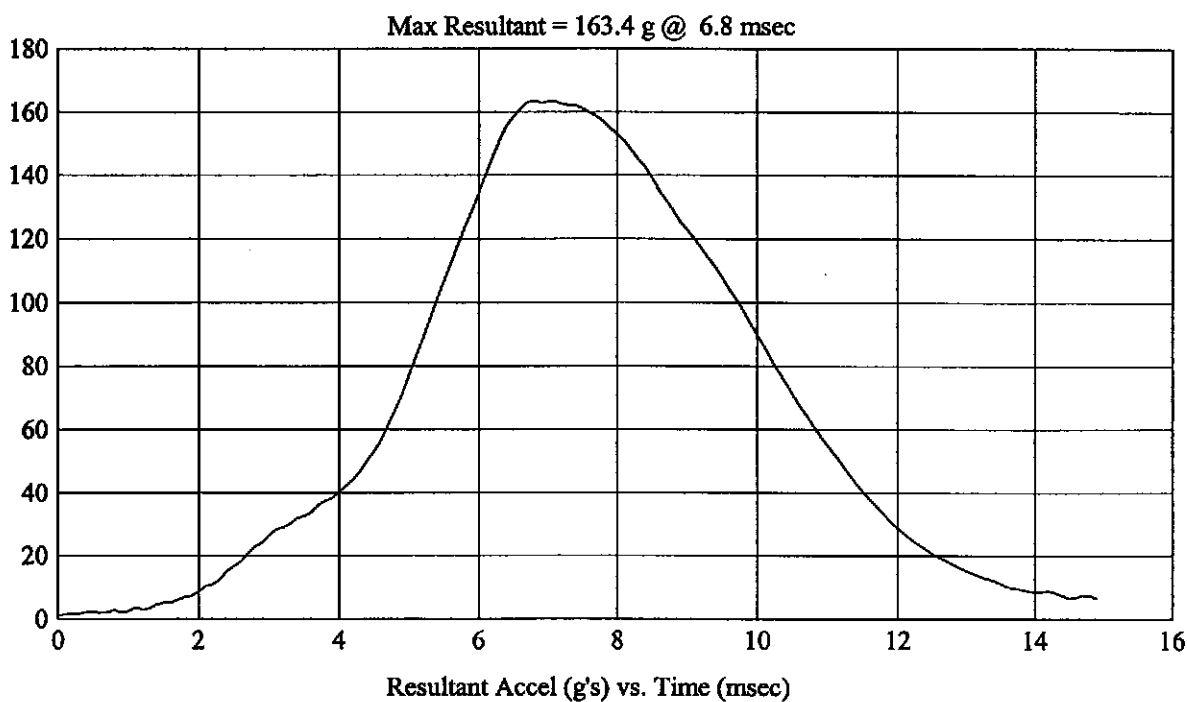
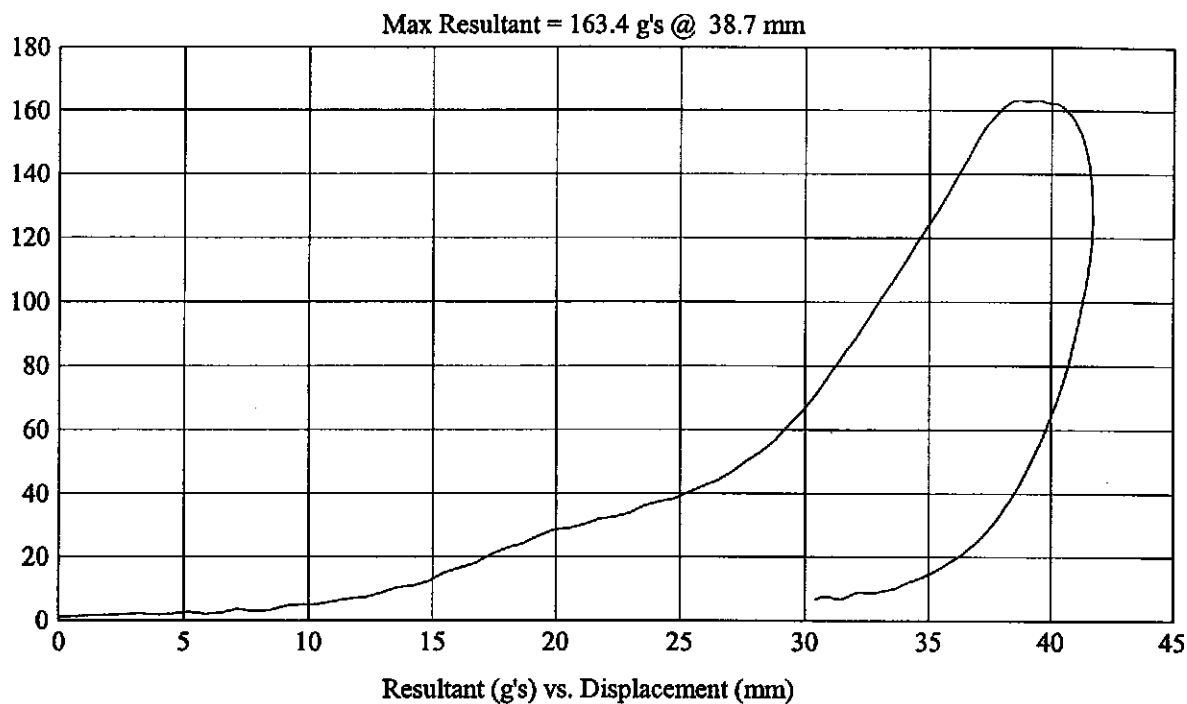
*Only necessary for NHTSA (Government) Compliance testing.

FMH
G04I7-001.6Customer: CHEVY
Test # 8
FM4088
Additional Desc: N/A

Vehicle Program : COLORADO LS

Model Year: 2004
Target: SR2(b)
Vehicle Side: Left
Horz/Vert Angle: 270/50

HIC(d) = 946, HIC = 1033, Delta T = 5.3 msec

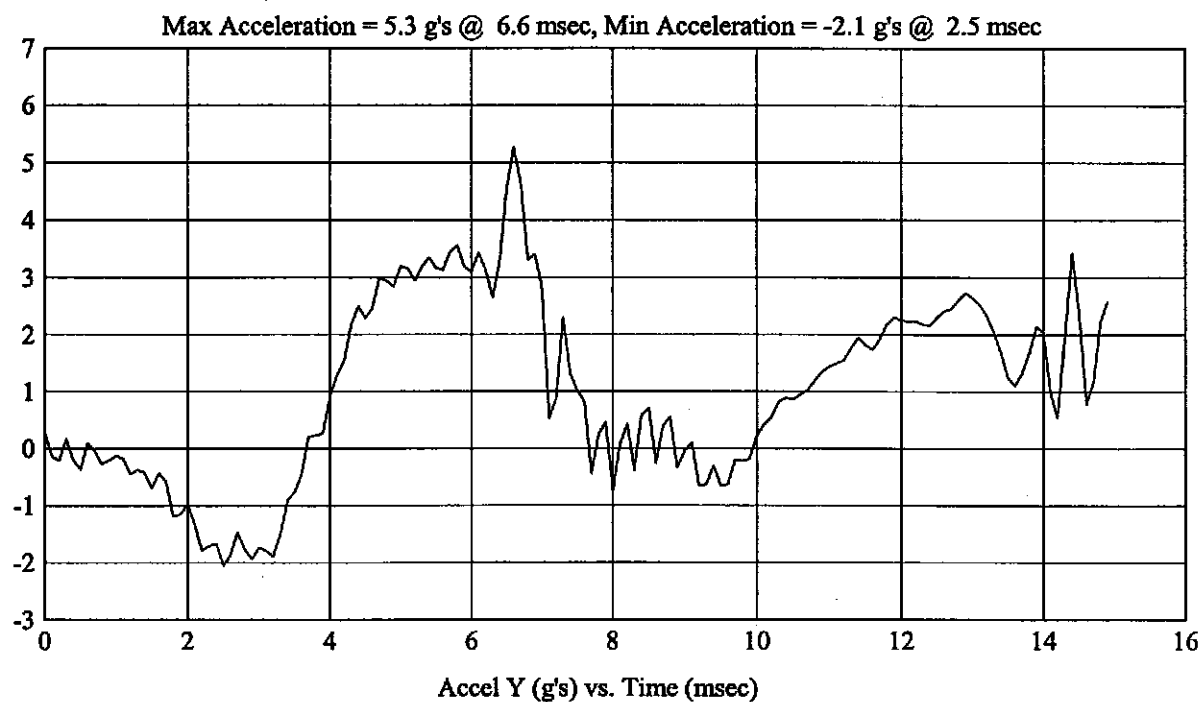
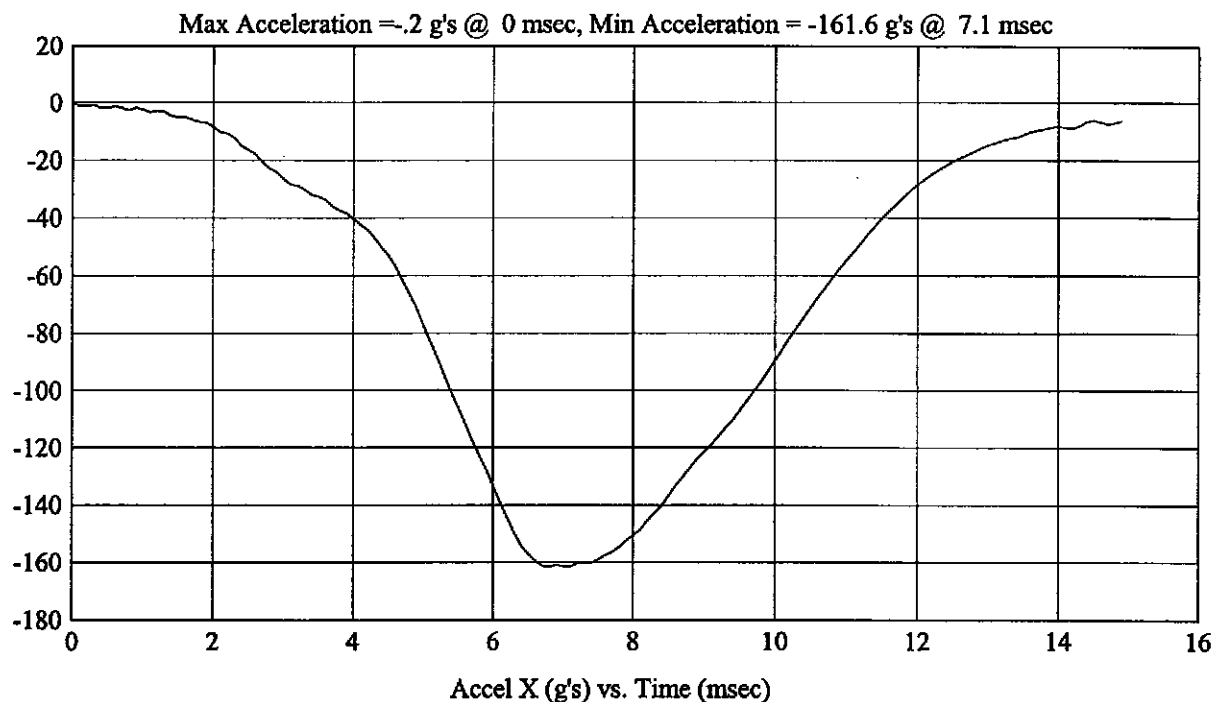


FMH
G04I7-001.6Customer: CHEVY
Test # 8
FM4088
Additional Desc: N/A

Vehicle Program : COLORADO LS

Model Year: 2004
Target: SR2(b)
Vehicle Side: Left
Horz/Vert Angle: 270/50

HIC(d) = 946, HIC = 1033, Delta T = 5.3 msec



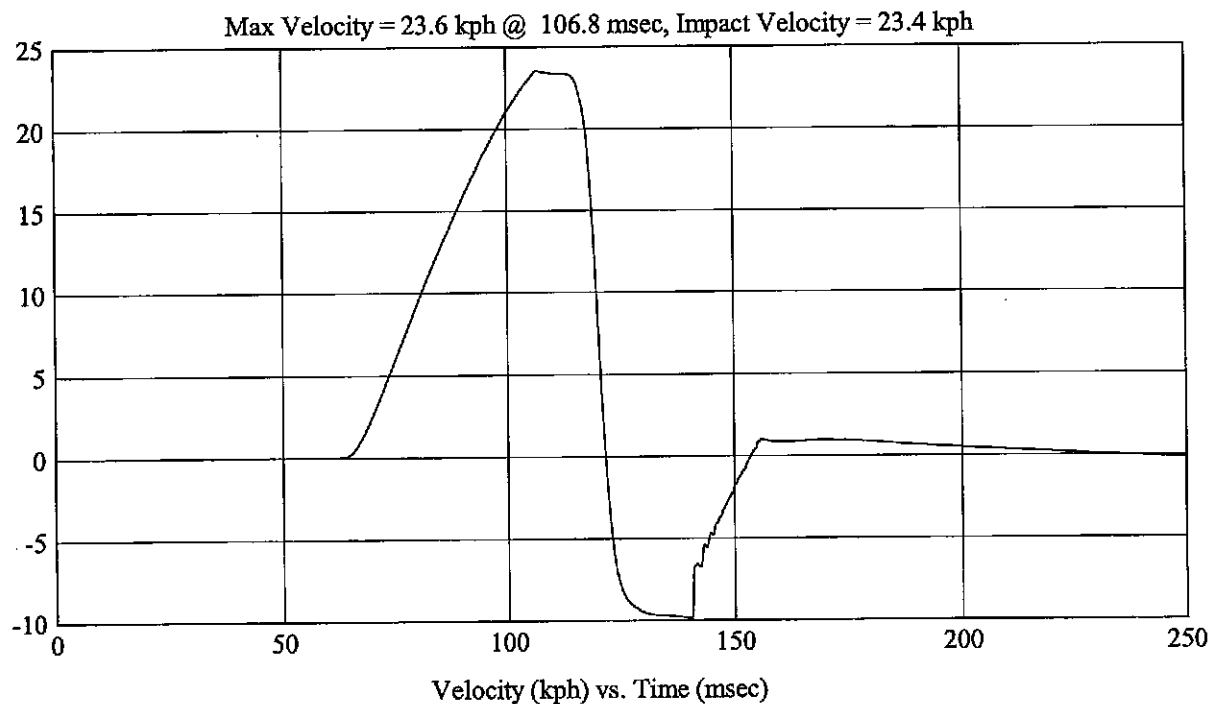
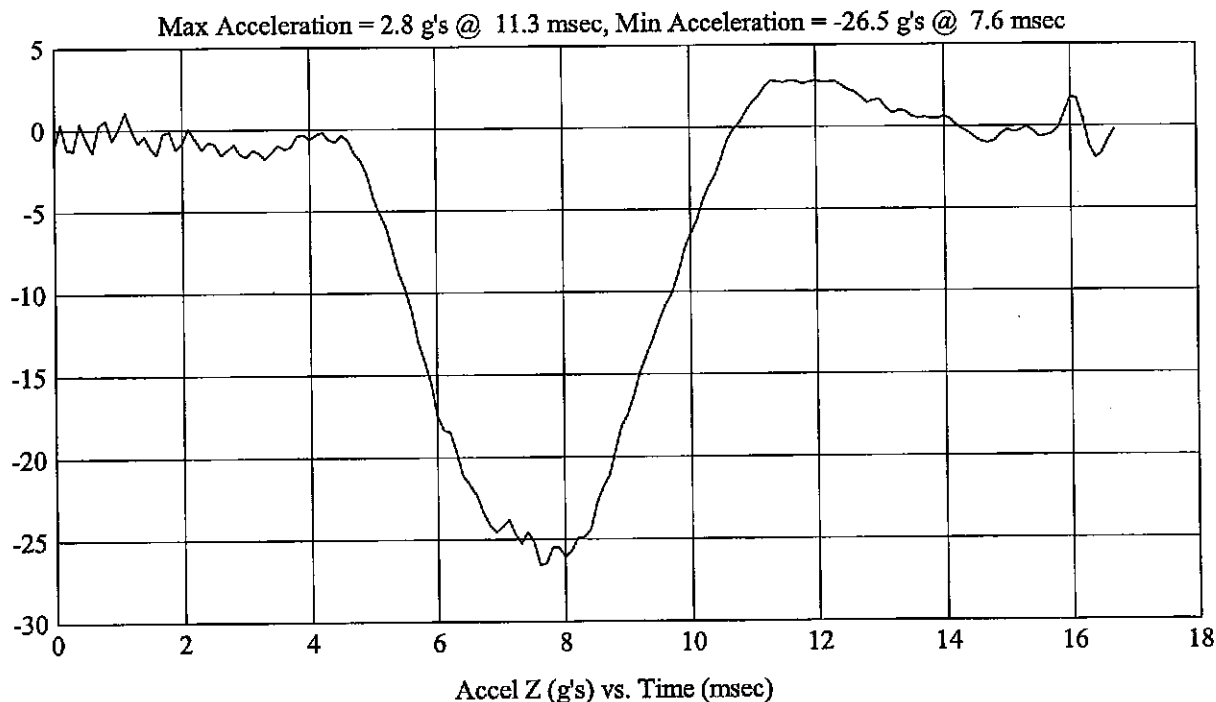
FMH
G04I7-001.6Customer: CHEVY
Test # 8
FM4088
Additional Desc: N/A

Vehicle Program : COLORADO LS

Test Date: 4/14/04

Model Year: 2004
Target: SR2(b)
Vehicle Side: Left
Horz/Vert Angle: 270/50

HIC(d) = 946, HIC = 1033, Delta T = 5.3 msec



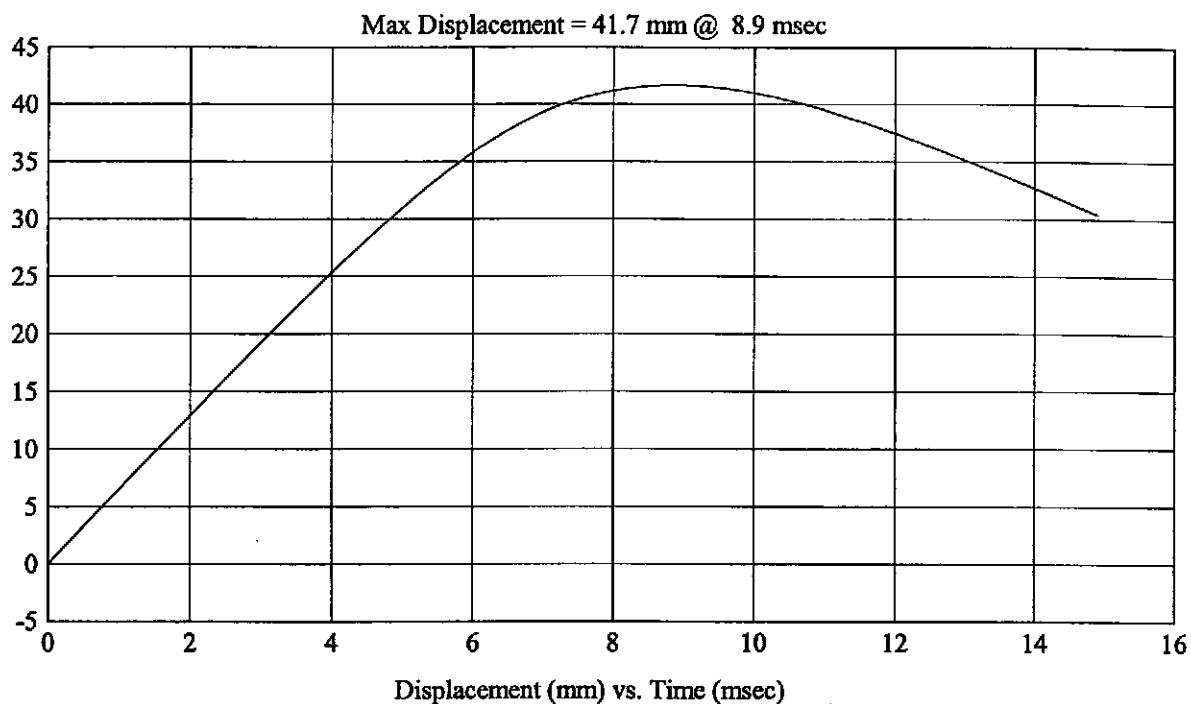
FMH
G04I7-001.6

Customer: CHEVY
Test # 8
FM4088
Additional Desc: N/A

Vehicle Program : COLORADO LS

Model Year: 2004
Target: SR2(b)
Vehicle Side: Left
Horz/Vert Angle: 270/50

HIC(d) = 946, HIC = 1033, Delta T = 5.3 msec



Impact Testing
4/13/04 G0417-0016
2004 CHEVY COLORADO LS C40112
FMVSS 201U - UPPER INTERIOR
TEST#4 RIGHT SR2(B)
HV IMPACT ANGLE= 90 / 50
FM4084 PRE-TEST

IMPACT TESTING
01/004 6047/0016
2014 CHEVY COLORADO LS 040112
2014SS 2010 - UPPER INTERIOR
TEST#4 RIGHT SR2(B)
HV IMPACT ANGLE= 90 / 50
FW4084 POST TEST

=====ing
4/13/04 Impact Testing
G0417-0016
2004 CHEVY COLORADO LS C40112
FMVSS 201U - UPPER INTERIOR
TEST#4 RIGHT SR2(B)
H/V IMPACT ANGLE= 90 / 50
FM4084 POST TEST

MICHIGAN OPERATIONS
DATE: 3/20/03
SUPERCEDES: MGATP201U_FRAME #2.4

DOC. NO.: MGATP201U_FRAME #2
REVISION NO.: 5
PAGE 9 OF 9

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: C40112 VEHICLE YR/MAKE/MODEL: 2004 CHEVY COLOMADO LS

GENERAL TEST PARAMETERS:

Test Number: 4
Target (Vehicle Side): left/right SR2(B) Temperature: 24 °F/C
MGA Test Reference No.: FM408Y Humidity: 26 %
Approach Angles: Horizontal 90 ° Time of Test: 3:15 am/pm
Vertical 50 ° FMH Serial No: 35

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
978	1076	5.2	23.4	8	4

INSTRUMENTAION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J35924	-91.3	1.20	1.20
Y	6	J35919	93.5	1.23	1.23
Z	7	J31051	93.2	1.51	1.51

REMARKS (Summary of test, damage, non-compliance, invalid test, etc.): _____

SLIGHT HEADLINE DEFORMATION

Recorded By: [Signature] Approved By*: Heidi A. Kallala Date: 4/15/04

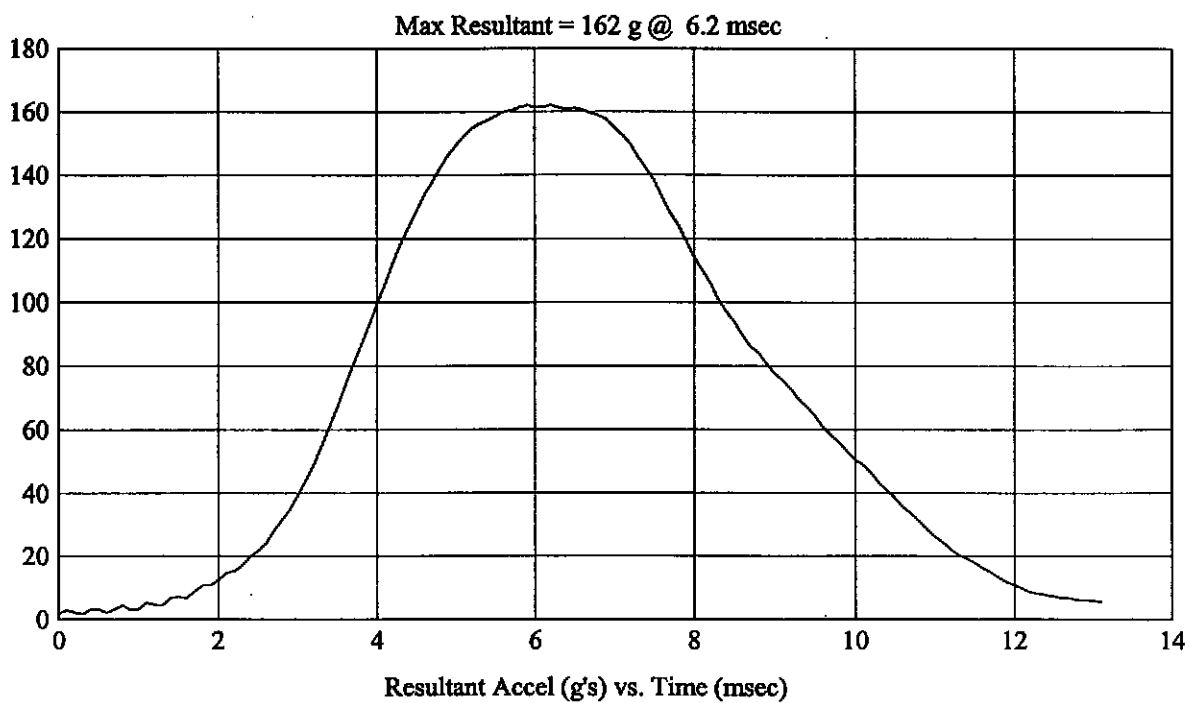
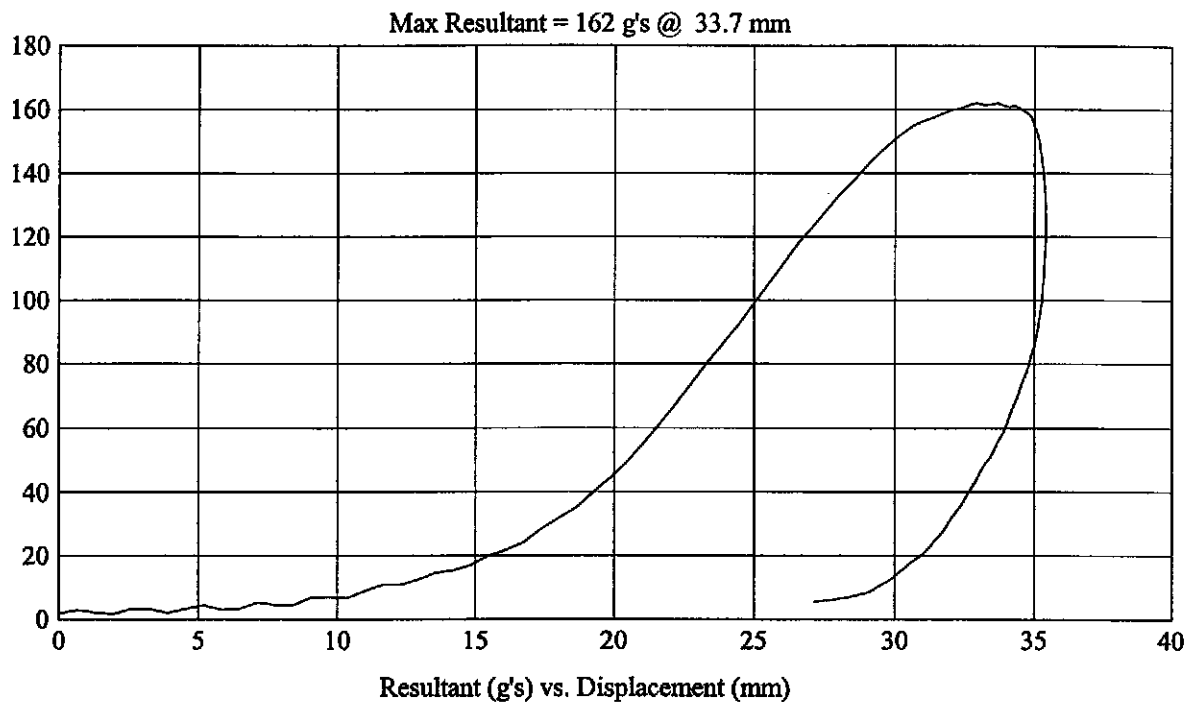
*Only necessary for NHTSA (Government) Compliance testing.

FMH
G04I7-001.6Customer: CHEVY
Test # 4
FM4084
Additional Desc: N/A

Vehicle Program : COLORADO LS

Model Year: 2004
Target: SR2(b)
Vehicle Side: Right
Horz/Vert Angle: 90/50

HIC(d) = 978, HIC = 1076, Delta T = 5.2 msec

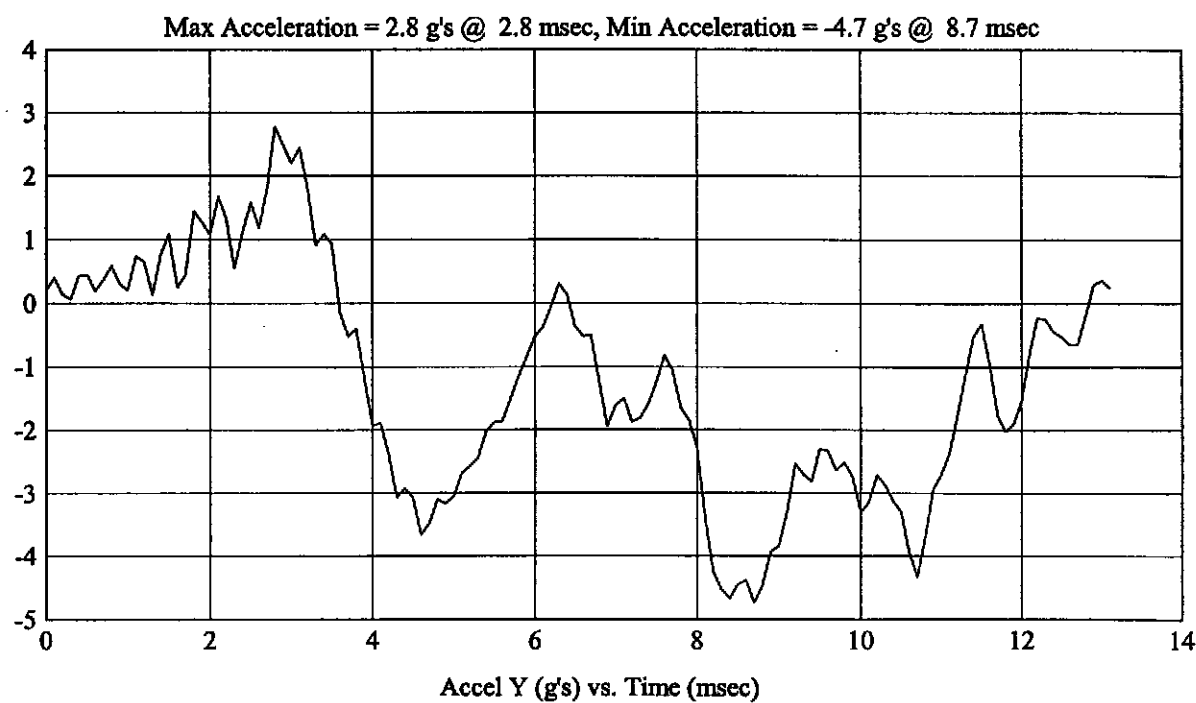
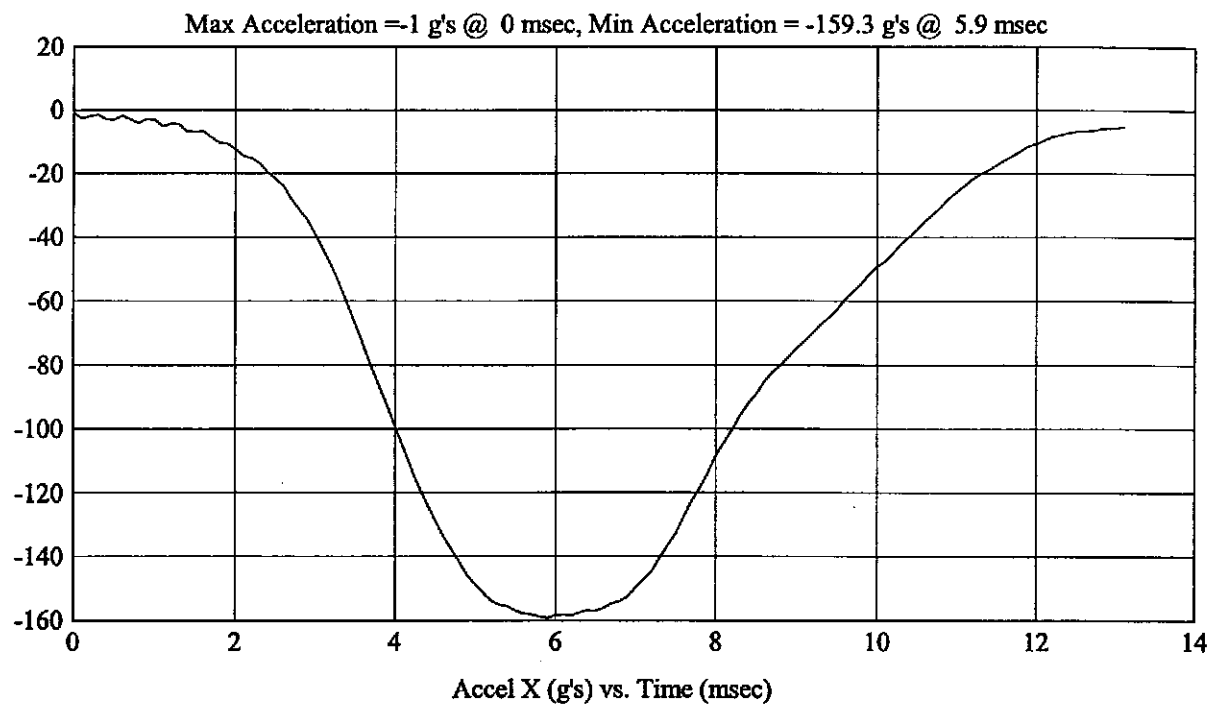


FMH
G04I7-001.6Customer: CHEVY
Test # 4
FM4084
Additional Desc: N/A

Vehicle Program : COLORADO LS

Model Year: 2004
Target: SR2(b)
Vehicle Side: Right
Horz/Vert Angle: 90/50

HIC(d) = 978, HIC = 1076, Delta T = 5.2 msec



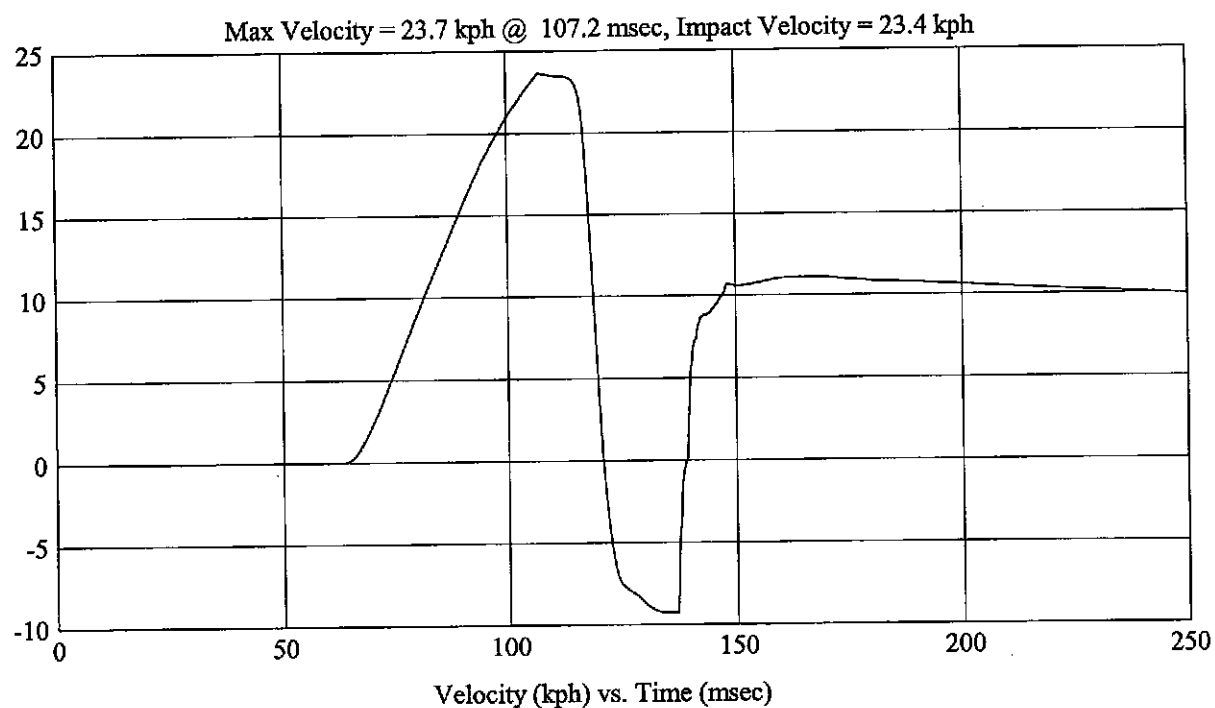
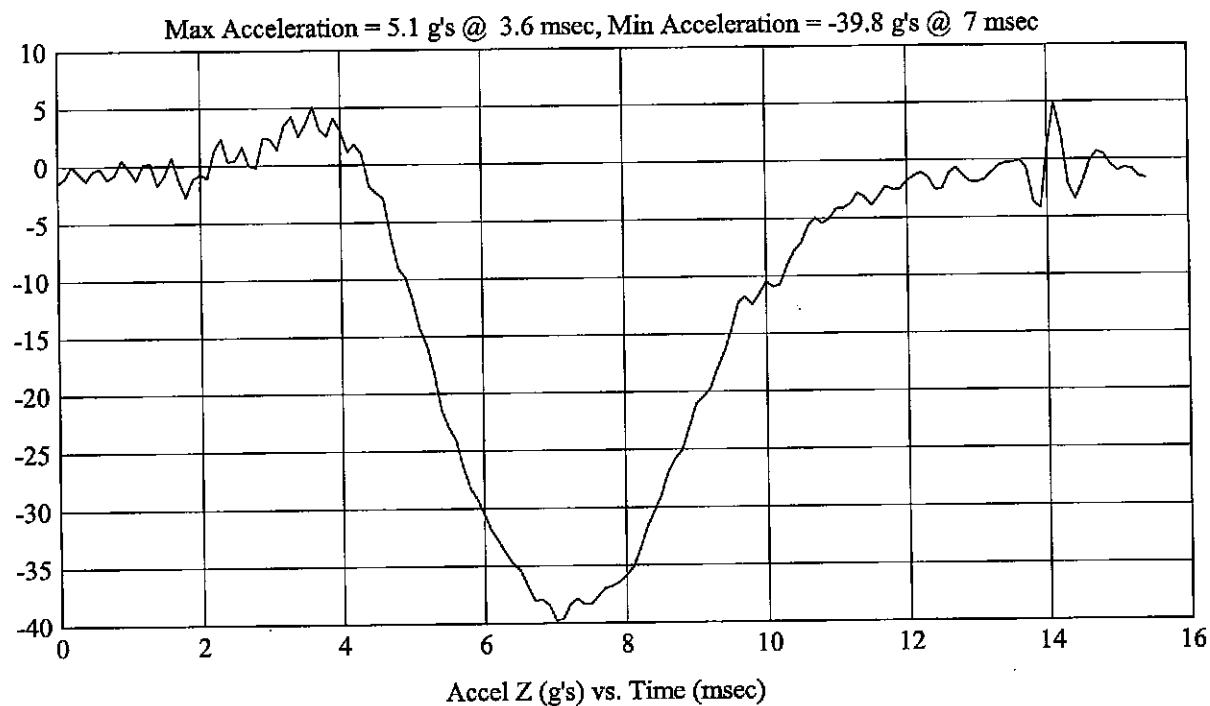
FMH
G04I7-001.6Customer: CHEVY
Test # 4
FM4084
Additional Desc: N/A

Vehicle Program : COLORADO LS

Test Date: 4/13/04

Model Year: 2004
Target: SR2(b)
Vehicle Side: Right
Horz/Vert Angle: 90/50

HIC(d) = 978, HIC = 1076, Delta T = 5.2 msec



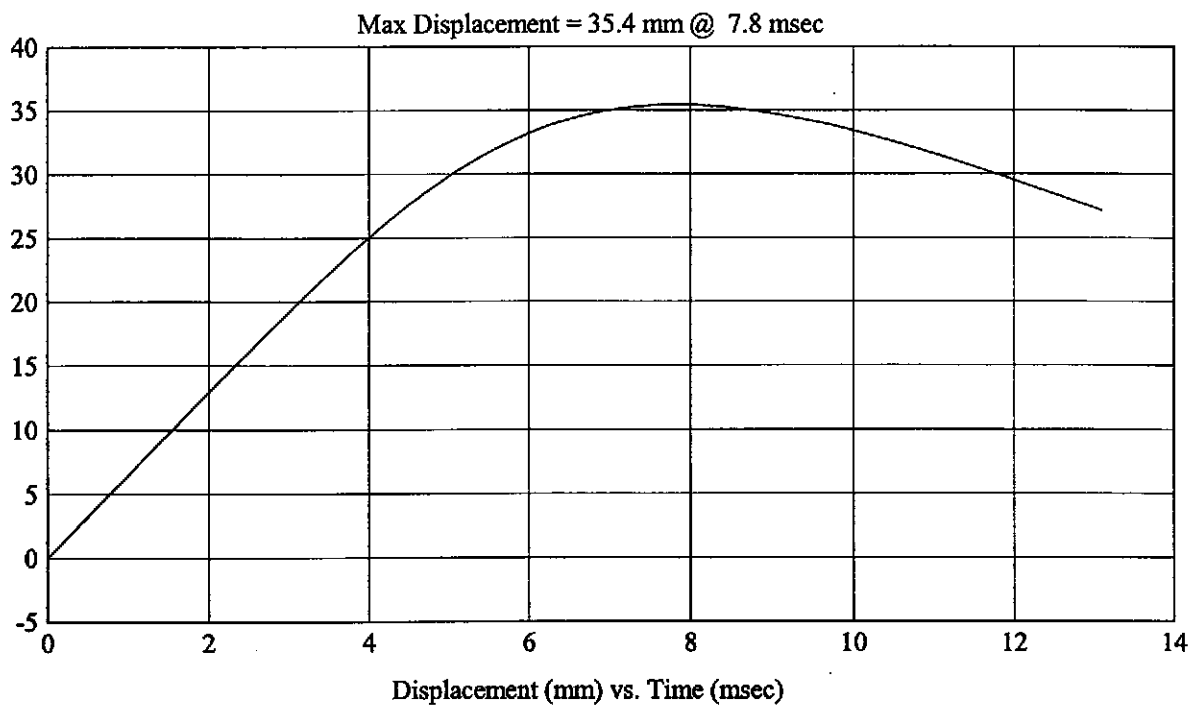
FMH
G04I7-001.6

Customer: CHEVY
Test # 4
FM4084
Additional Desc: N/A

Vehicle Program : COLORADO LS

Model Year: 2004
Target: SR2(b)
Vehicle Side: Right
Horz/Vert Angle: 90/50

HIC(d) = 978, HIC = 1076, Delta T = 5.2 msec



7032 7032 Test #6
4/13/04 60417-0016
2004 CHEVY COLORADO LS CARRY
FMVSS 2010 - UPPER INTERIOR
TEST#6 RIGHT UR5
H/V IMPACT ANGLE= 90 / 85
FM4086 PRE-TEST

Impact Testing
4/13/04 GC417-001-6
2004 CHEVY COLORADO LS 040112
FMVSS 201U - UPPER INTERIOR
TEST#6 RIGHT UR5
H/V IMPACT ANGLE= 90 / 38
FM4086 POST TEST

Impact Testing
4/15/04 GC417-001.6
2004 CHEVY COLORADO LS C40112
FMVSS 201U - UPPER INTERIOR
TEST#6 RIGHT UR5
H/V IMPACT ANGLE= 90 / 38
FM4086 POST TEST

MICHIGAN OPERATIONS
DATE: 3/20/03
SUPERCEDES: MGATP201U_FRAME #2.4

DOC. NO.: MGATP201U_FRAME #2
REVISION NO.: 5
PAGE 9 OF 9

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: CY0112 VEHICLE YR/MAKE/MODEL: 2004 CHRYSLER LEXARADO LS

GENERAL TEST PARAMETERS:

Test Number: 6

Target (Vehicle Side): left/right URS

Temperature: 29 °F(°C)

MGA Test Reference No.: FM4006

Humidity: 25 %

Approach Angles: Horizontal 90 °

Time of Test: 4:37 am/pm am

Vertical 38 °

FMH Serial No: 37

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
<u>698</u>	<u>705</u>	<u>6.0</u>	<u>23.6</u>	<u>56</u>	<u>4</u>

INSTRUMENTAION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
<u>X</u>	<u>5</u>	<u>J35000</u>	<u>-95.9</u>	<u>1.20</u>	<u>1.20</u>
<u>Y</u>	<u>6</u>	<u>J35841</u>	<u>92.0</u>	<u>1.23</u>	<u>1.23</u>
<u>Z</u>	<u>7</u>	<u>J35741</u>	<u>89.3</u>	<u>1.51</u>	<u>1.51</u>

REMARKS (Summary of test, damage, non-compliance, invalid test, etc.):

NO VISIBLE DAMAGE

Recorded By: [Signature] Approved By: Heena Q. Kaloto Date: 4/3/04

*Only necessary for NHTSA (Government) Compliance testing.

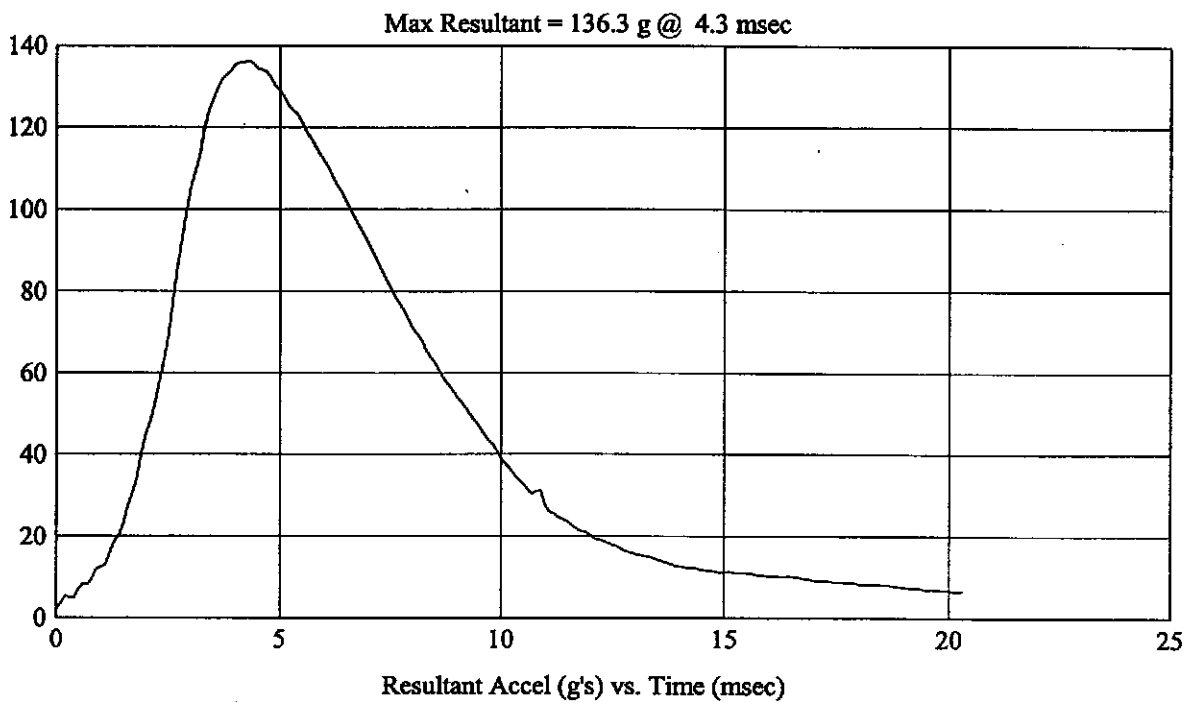
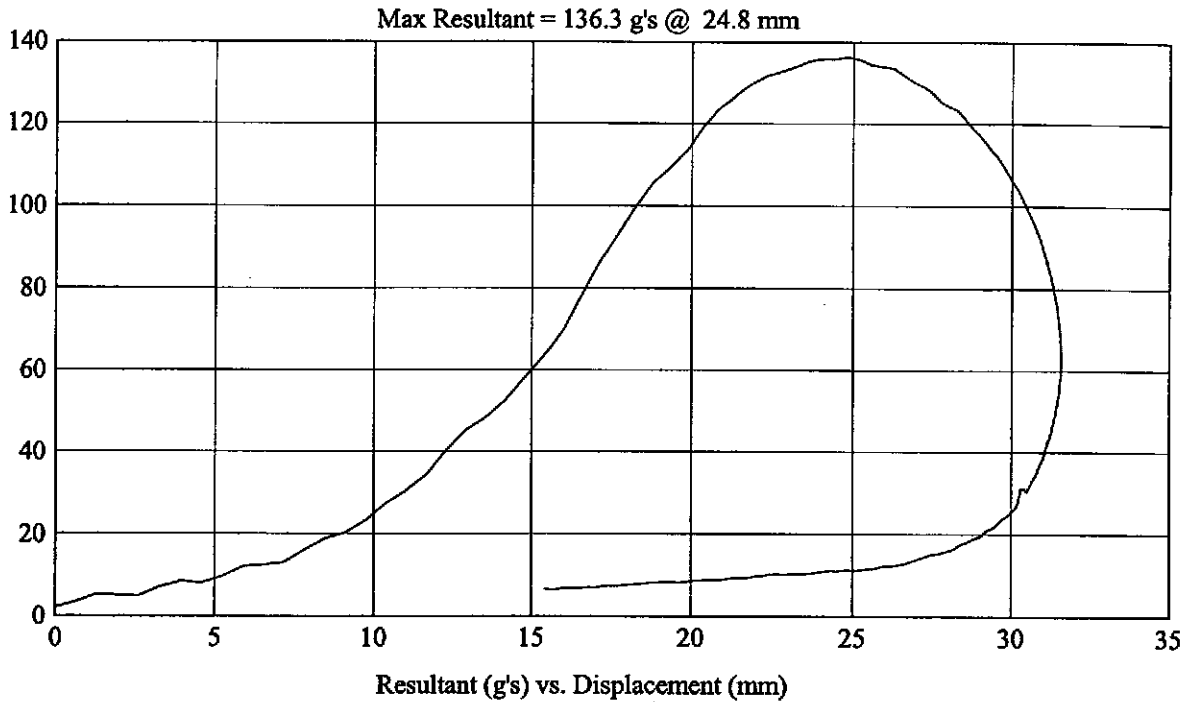
FMH
G04I7-001.6

Customer: CHEVY
Test # 6
FM4086
Additional Desc: N/A

Vehicle Program : COLORADO LS

Model Year: 2004
Target: UR5
Vehicle Side: Right
Horz/Vert Angle: 90/38

HIC(d) = 698, HIC = 705, Delta T = 6 msec

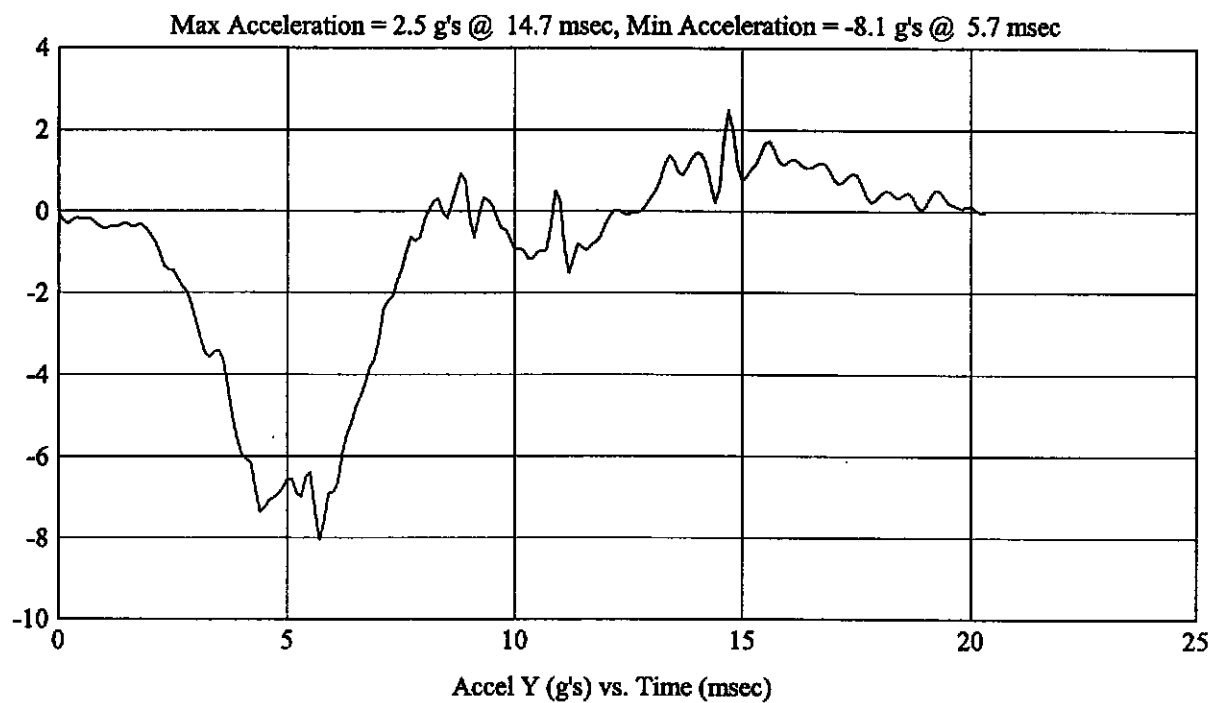
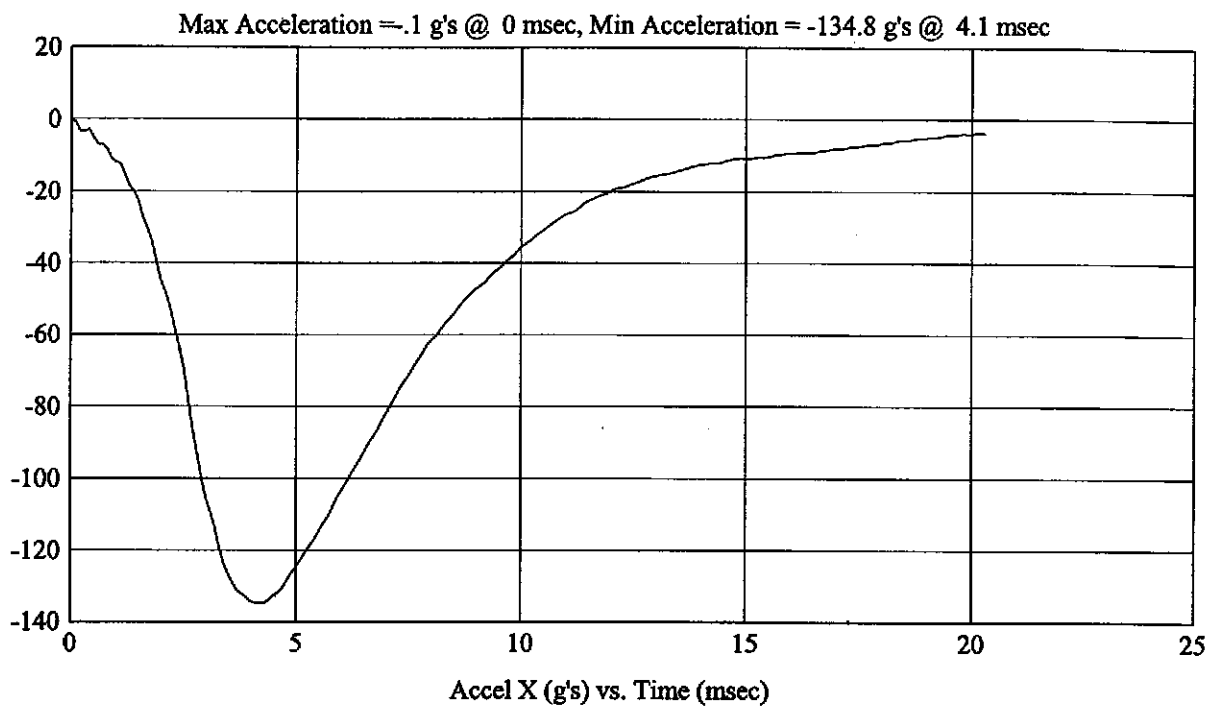


FMH
G04I7-001.6Customer: CHEVY
Test # 6
FM4086
Additional Desc: N/A

Vehicle Program : COLORADO LS

Model Year: 2004
Target: UR5
Vehicle Side: Right
Horz/Vert Angle: 90/38

HIC(d) = 698, HIC = 705, Delta T = 6 msec



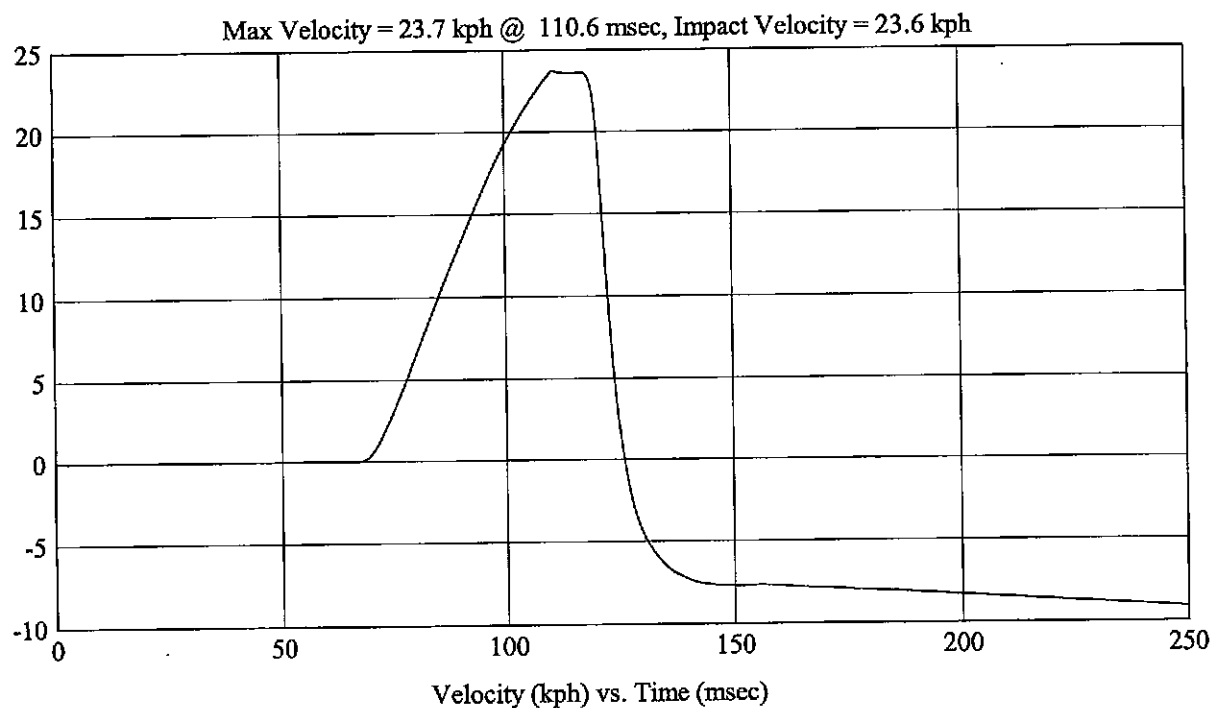
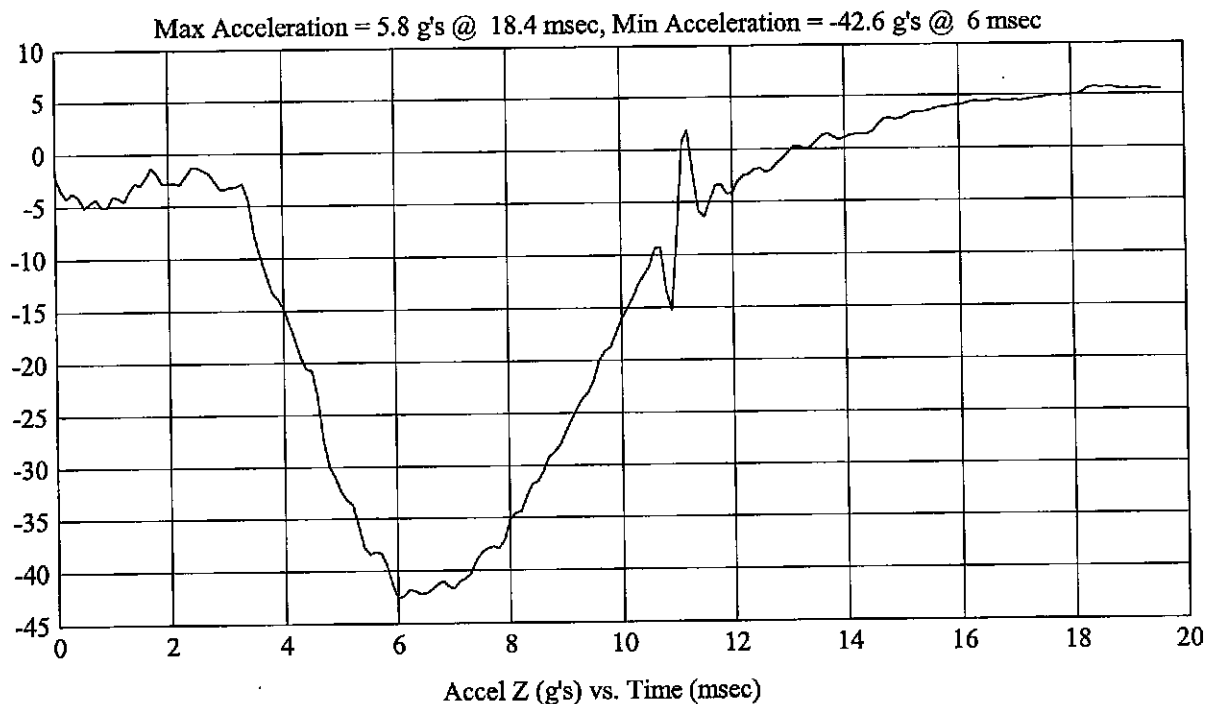
FMH
G04I7-001.6Customer: CHEVY
Test # 6
FM4086
Additional Desc: N/A

Vehicle Program : COLORADO LS

Test Date: 4/13/04

Model Year: 2004
Target: UR5
Vehicle Side: Right
Horz/Vert Angle: 90/38

HIC(d) = 698, HIC = 705, Delta T = 6 msec



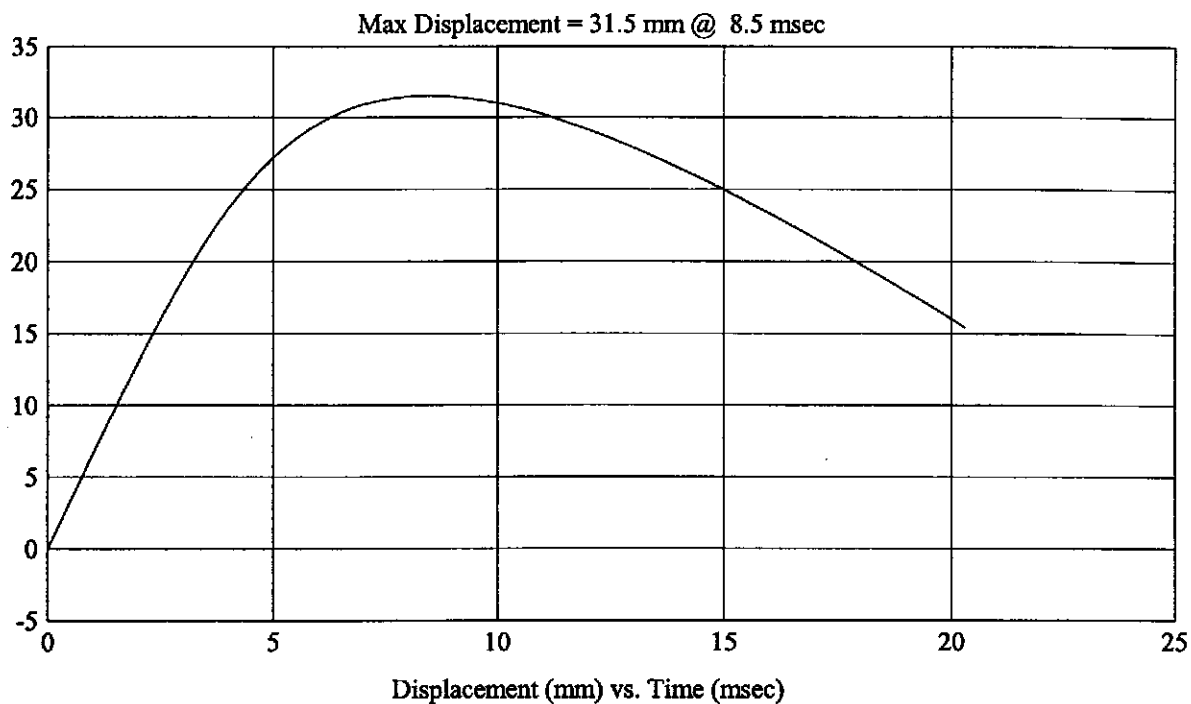
FMH
G04I7-001.6

Customer: CHEVY
Test # 6
FM4086
Additional Desc: N/A

Vehicle Program : COLORADO LS

Model Year: 2004
Target: UR5
Vehicle Side: Right
Horz/Vert Angle: 90/38

HIC(d) = 698, HIC = 705, Delta T = 6 msec



4.0 TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

The following section lists the test equipment for the compliance test series. Items marked with an asterisk are calibrated by an external lab. An additional summary table is given for the pre and post-test calibration data for the Free Motion Headforms. The temperature trace to confirm testing was conducted between 66°F and 78°F (19°C - 26°C) is included in Appendix A.

TABLE 4-1 LIST OF ITEMS USED

ITEM	MANUFACTURER NAME	MODEL #	FUNCTION OF ITEM	ACCURACY	CAL. INTERNAL
Head Drop Tower (includes test frame and DAS)	MGA Research Corp.	MGA-100-DC	FMH Calibration	N/A	N/A
Accelerometers	Endevco	7264-2000	Acceleration Data	±0.5%	6 months
*Digital Inclinator	Mitutoyo	PRO 360	Set Angle of FMH/Targeting	0.1°	Annual
FMVSS 201U Test Frame (includes the propulsion control system, actuator, test frame, and DAS)	MGA Research Corp.	MGA-100-FMH	Test System	N/A	N/A
Free Motion Headforms	UTAMA UTAMA UTAMA UTAMA	035 036 037 038	Test Device	N/A	Pre and Post-Test Series
High Speed Video	Kodak	RO1000	Record Event	N/A	N/A
*FARO™	Faro Technologies	S08059801273	Targeting	0.1 mm	Annual
Measuring Devices: - Tape Measure - Plumb Bobs - Protractor	Stanley N/A Craftsman	33-215 — —	Measurement Targeting FMH setup Horizontal Measurement	1 mm N/A 0.5°	Annual
*Vehicle Scale	Cardinal	9804-022	Weighing Vehicle	± .5 kg	Annual
* Scale	Detecto	AP-20	Weigh FMH Head	± 0.01 lb	Annual
*Temperature Recorder	Dickson	TR-320	Record Temperature and Humidity	± 1°C ± 1% RH	Annual

TABLE 4-2 FMH CALIBRATION SUMMARY DATA SUMMARY TABLE

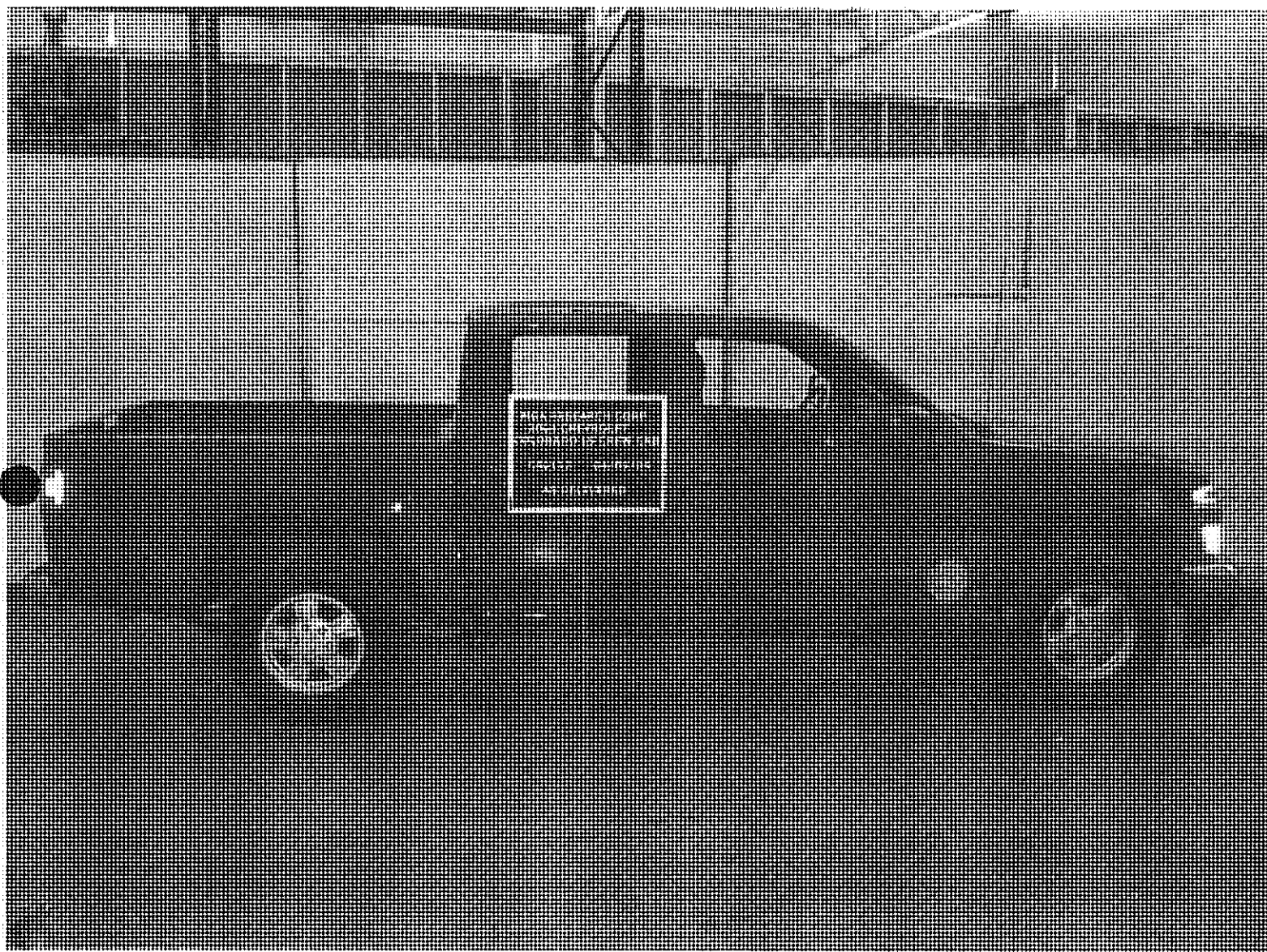
FMH Serial #		Weight (lbs)	Temp (°C)	% Humidity	Peak Resultant Acceleration (G's)	Peak Lateral Acceleration (G's)	Unimodal
Pre	#35	10.02	23.0	24.0	238.5	11.6	Yes
Post	#35	10.02	24.0	19.0	243.3	10.1	Yes
Pre	#36	10.03	23.0	24.0	255.2	2.1	Yes
Post	#36	10.02	24.0	19.0	254.5	9.3	Yes
Pre	#37	9.96	23.0	24.0	249.8	12.0	Yes
Post	#37	9.96	24.0	19.0	249.0	7.3	Yes
Pre	#38	9.99	23.0	24.0	254.7	3.2	Yes
Post	#38	9.99	24.0	19.0	252.1	13.7	Yes

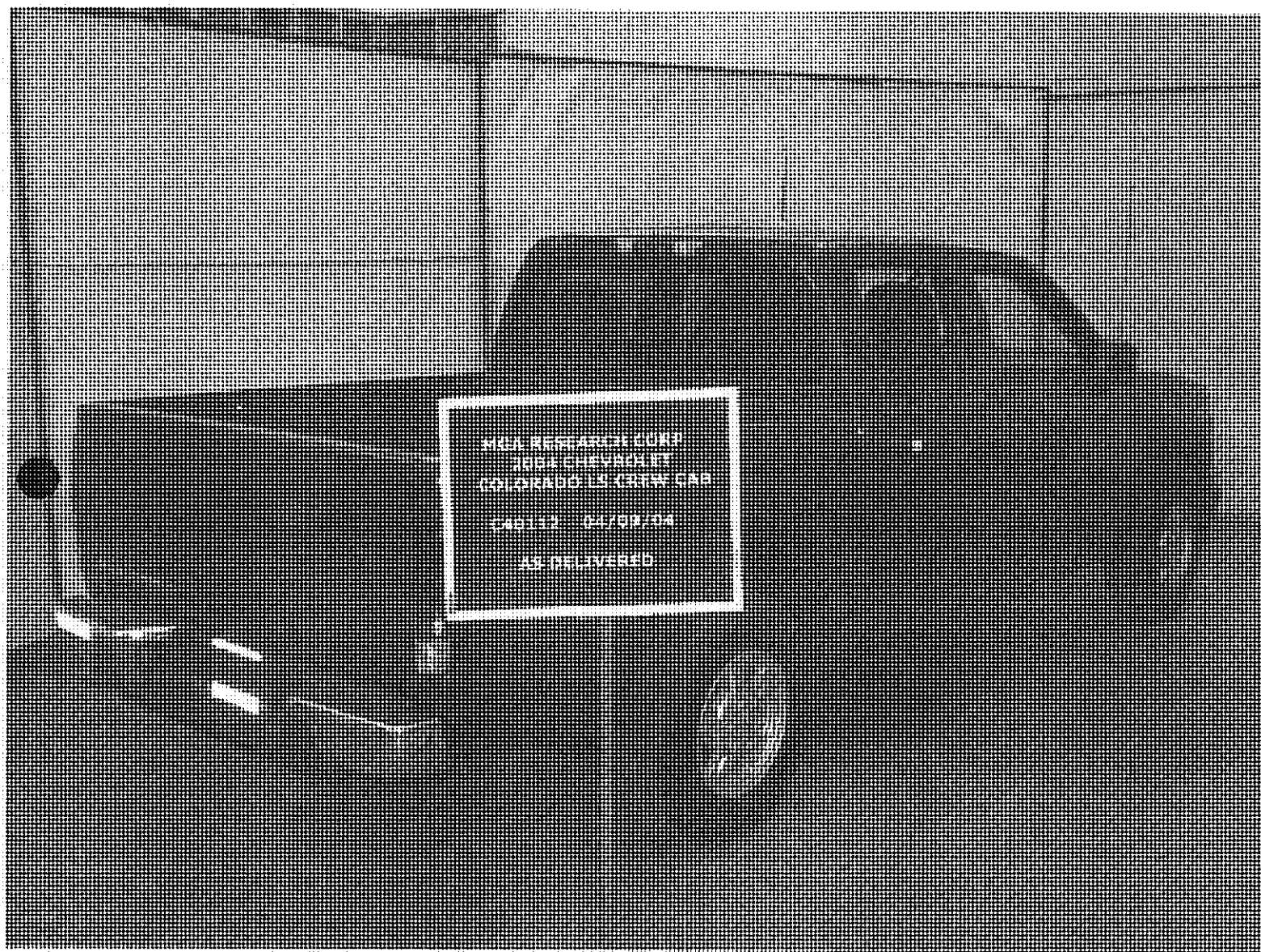
Calibration certificates and headform calibration information can be found in the P572L Performance Calibration report which accompanies this report.

RECORDED BY: David G. Gotwals

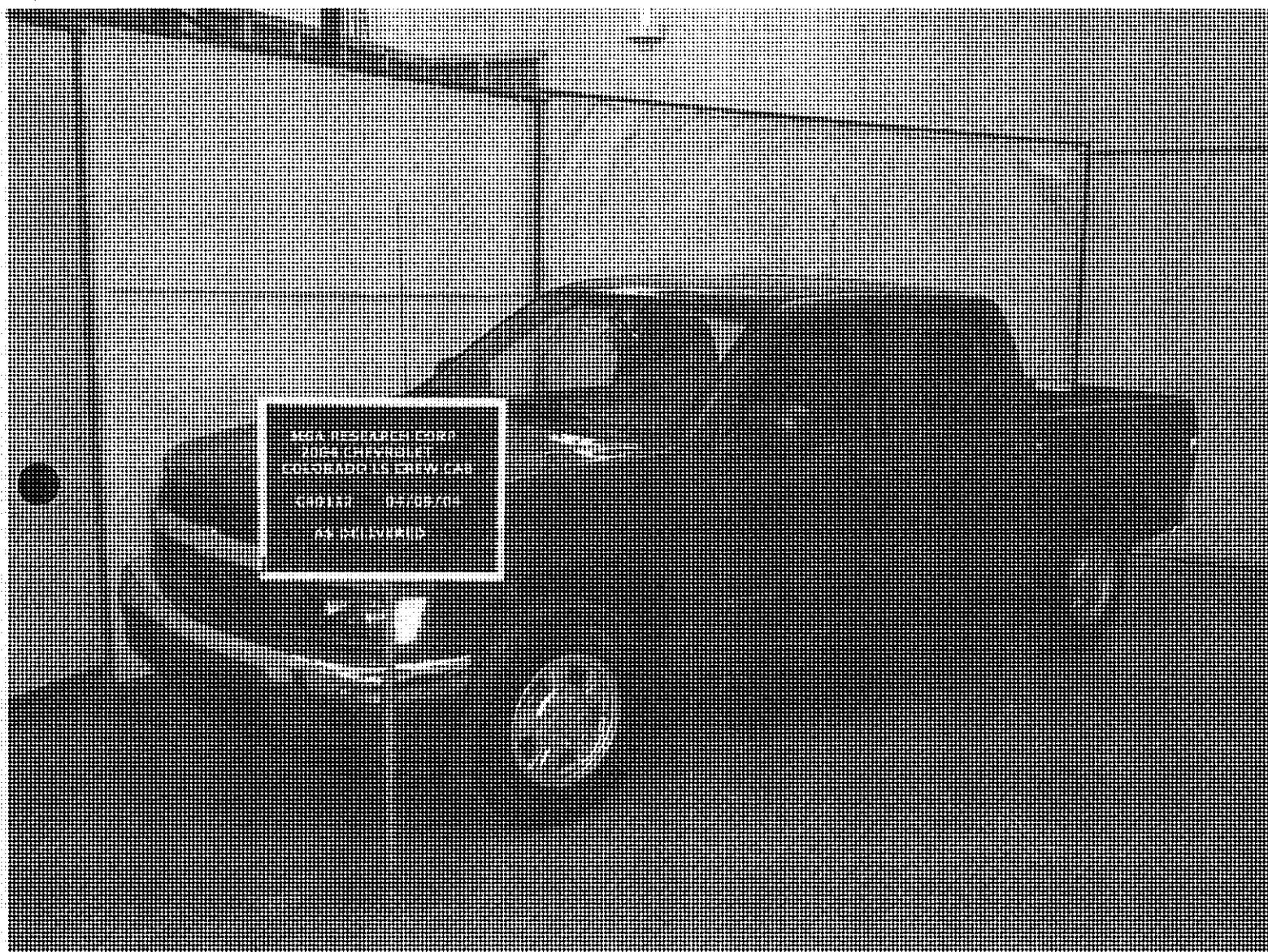
DATE: April 14, 2004

APPROVED BY: Helen A. Kaleto











GAWR
2250KG (5000LB)

GAWR FR
1140KG (2530LB)

GAWR RR
1314KG (2900LB)

THIS VEHICLE CONFORMS TO ALL MODEL S10000
APPLICABLE FEDERAL MOTOR
VEHICLE SAFETY AND THEFT
PREVENTION STANDARDS IN
EFFECT ON THE DATE OF
MANUFACTURE SHOWN ABOVE.

1GCCS136848149843
TYPE: TRUCK

SPHL TIRE SIZE

FRY P225/70R15

RR P225/70R15

SPA T155HRH18



RIM

15X6.5J

15X6.5J

15X4Y

COLD TIRE PRESSURE

230 KPA 33 PSI

230 KPA 33 PSI

420 KPA 60 PSI

TIRE AND LOADING INFORMATION

SEATING CAPACITY : TOTAL 5 ; FRONT 2 ; CENTER 3

The combined weight of occupants and cargo should never exceed 550 kg or 1212 lbs.

ORIGINAL TIRE SIZE	COLD TIRE INFLATION PRESSURE	
P225/75R15	FRONT	230 kPa, 33 PSI
P225/75R15	REAR	230 kPa, 33 PSI
T155/90R16	SPARE	420 kPa, 60 PSI

**SEE OWNER'S
MANUAL FOR
ADDITIONAL
INFORMATION**

GM1300
4-DOOR CREW CAB
FAVSS 2010 TESTING
PRE-TEST COMPONENT
G0417-001A



2014 CHEVROLET COLORADO IS
4 DOOR CREW CAB
FMVSS 2010 TESTING

PRE-TEST COMPONENT
C40112 G0417-0016

UNIDENTIFIED 04/13/04
2004 CHEVROLET COLORADO LS
4-DOOR CREW CAB
FMVSS 201U TESTING
PRE-TEST COMPONENT
C640112 C6417-201 6

04/13/04
2004 CHEVROLET COLORADO LS
4 DOOR CREW CAB
NHTSA 2010 TESTING
PRE TEST COMPONENT
04/12 0347-1010

04/13/04
2004 CHEVROLET COLORADO LS
4-DOOR CREW CAB
FMVSS 2010 TESTING
PRE-TEST COMPONENT
C40112 G0417-001.6

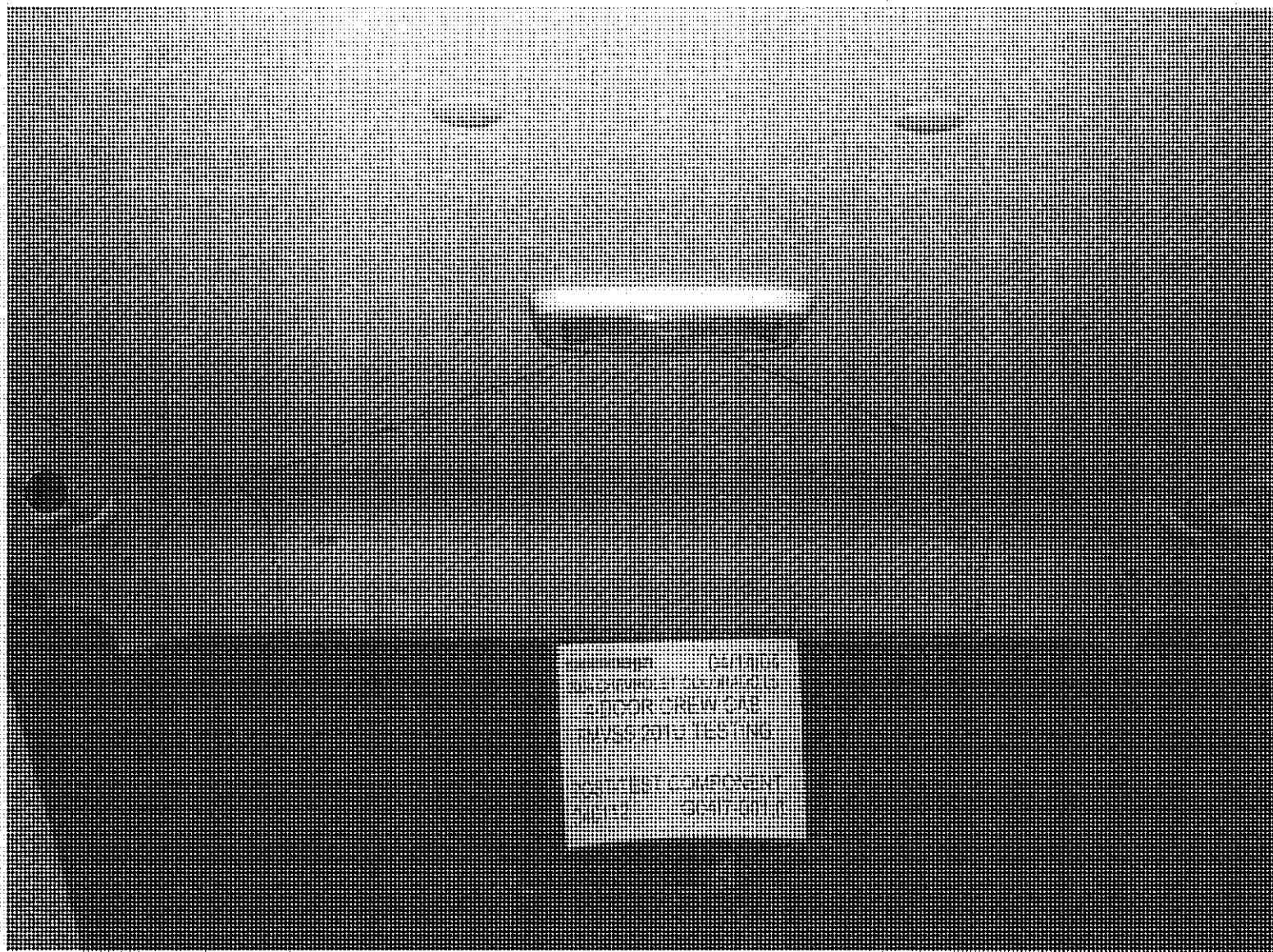


04/14/14
2014 CHEVROLET COLORADO
4 DOOR CREW CAB
EMVSS 2010 TESTING

POST-TEST COMPONENT
G40412 G40412

04/14/04
2004 CHEVROLET COLORADO
4-DOOR CREW CAB
FMVSS 2010 TESTING

POST-TEST COMPONENT
040112 00417-0015



04/14/04
4 DOOR CREW CAB
FLVSS 204U TESTING

POST TEST COMPONENT
04047 0018

04/14/04
2001 CHEVROLET COLORADO LS
4 DOOR CREW CAB
FMVSS 201U TESTING
POST TEST COMPONENT
C40112 G0417-001-6



C40112 2004 Chevrolet Colorado
Temperature Trace 4/13-14/04

